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MEDICAL TRANSACTIONS.

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DUBLIN

MEDICAL TRANSACTIONS,

A SERIES OF PAPERS BY MEMBERS OF THE

ASSOCIATION OF FELLOWS AND LICENTIATES



OF THE

KING AND QUEEN'S COLLEGE OF PHYSICIANS
IN IRELAND.

NEW SERIES. VOL. I. PART I.

DUBLIN:

JAMES MARSHALL LECKIE,
MDCCCXXX.

PREFACE.

IN commencing a Second Series of these Transactions, the Association feel strong motives for exertion, from the approval with which the former volumes have been received by the Medical Profession. The favourable reception they have met with assures the Association, that this New Series will be treated with equal candour.

The object of such a publication has been thus far happily attained, many useful essays have been rescued from oblivion, and many able practitioners have been invited to observe and to inquire. To succeed in any enterprise, the object of which is the public good, cannot fail of affording satisfaction to those who are engaged in it. To those who have enabled the Members of the Association to enjoy this satisfaction, they owe their grateful acknowledgments.

It is with the deepest regret the Association has to record the death of one of its earliest Members, to whose exertions it was chiefly indebted

for its foundation, and who lived to see the object fully accomplished, for the attainment of which he took so lively an interest. Dr. Brooke died on the 28th of June, 1829. On the announcement of this melancholy event, it was resolved that an eulogium* should be pronounced at the next general meeting, and that a suitable monument should be erected in St. Thomas's church, as a mark of the high esteem he was held in by the Association.

* Dr. Morgan having been requested to pronounce the eulogium, the Members were highly gratified by the manner in which he fulfilled their request, on the 13th July, 1829.

CONTENTS.

Two cases of Recovery from Laceration of the Uterus and Vagina, by Robert Collins, M. D.	1
Two cases of Pulmonary Apoplexy, illustrative of the value of Mediate Auscultation, by John C. Ferguson, A.M. M.B.	11
Case of Melanosis, by John Crampton, M.D.	23
Case of Perforation of the Stomach, and of the escape of a Lumbricus into the cavity of the Abdomen, by John Crampton, M.D.	29
Case of an Anomalous state of the Heart, by John Crampton, M.D.	34
Observations on the Use of Instruments, in cases of Diffi- cult and Protracted Labour, by John Beatty, M.D. .	41
Auscultation, the only unequivocal Evidence of Preg- nancy, with Cases by John C. Ferguson, A.M. M.B.	64
Cases of Putrefactive Disorganization of the Lungs, by Robert Law, A.M. M.B.	89
Hæmatemesis, dependant upon Disease of the Liver, by Robert Law, A.M. M.B.	105
A case of Cancer of the Uterus and adjacent Parts, with Observations, by John Beatty, M.D.	112
A singular Case of Extra Uterine Pregnancy, by Robert Collins, M.D.	118
Case of Hydrophobia, by J. H. Purdon, jun. M.D. Bel- fast, communicated by Dr. Osborne	125
Case of Ovarian Disease of a remarkable Character, by W. F. Montgomery, A.M.M.B. M.R.I.A. with two plates	133

A Case of Anomalous Labour, by Thos. Ferguson, M.D.	143
On the Motions and Sounds of the Heart, by D. J. Corrigan, M.D.	151
Ossification of the Mitral and Aortic Valves, with Induration of the Tricuspid, Hypertrophy, and Dilatation of both Auricles, Ventricle Sound, by Patrick Clinton, M.D.	204
On Polypi of the Heart, as an Idiopathic Affection, and as a Cause of Death, by William Harty, M.D.	218
Medical Report of the House of Recovery and Fever Hospital Cork-street, Dublin, for the year 1829, by John O'Brien, M.D. Subjects:—	
METEOROLOGY	256
CONTINUED FEVER	258
Statistics of Fever	258
Theories of Fever	268
Sketch of the Pathology of Fever deduced from the Symptoms	304
Summary of the treatment of Fever	314
INTERMITTENT FEVER	330
INFLAMMATORY DISEASES OF THE LUNGS	333
CATARRH BRONCHITIS	336
PLEURISY	348
PERICARDITIS	349
INFLAMMATORY DISEASES OF THE ABDOMINAL VISCERA	350
PERITONITIS	352
DYSENTERY	353
DISEASES OF THE STOMACH AND LIVER	359
RHEUMATISM	366
Description of a very remarkable Malformation in a Fœtus, in which nearly all the Abdominal Viscera and Intestinal Canal were External to the Body, by Wm. F. Montgomery, A.M. M.B. M.R.I.A. with a plate	375

TWO CASES OF RECOVERY FROM LACERATION

OF THE

UTERUS AND VAGINA,

BY

ROBERT COLLINS, M. D.

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LYING-IN HOSPITAL, DUBLIN.

Read, 1st December, 1828.

HOPING that the two following cases of recovery from rupture of the uterus and vagina, which is so extremely rare, may not be found uninteresting to the profession, I beg to submit them to the consideration of the committee of publication of this society.

Jemima Day, aged 25, was admitted into the hospital in labour of her third child (a boy,) with the hand and arm protruded out of the vagina as far as the elbow.

The funis was prolapsed and without pulsation.

She had been attended previous to admission by two surgeons and a midwife, and it was reported the midwife had mistaken the hand for the foot, and pulled it down.

When admitted she was in a very debilitated state, with a feeble quick pulse, ghastly countenance, expressive of much anxiety. It was evident she had suffered some most serious injury, and, from the symptoms, present rupture of the vagina or uterus was too apparent.

She had got sixty drops of tincture of opium before admission.

On examination, per vaginam, the shoulder and body of the child were found to be forced so low, and so firmly fixed in the pelvis, as to completely forbid any attempt to turn the child, nor was there any necessity to do so, as it was dead.

The thorax of the child was then perforated and broken down, and the breech was afterwards brought down with the crotchet, without the least difficulty.

On introducing the hand into the vagina after the child and placenta were taken away, an extensive laceration was found at the junction of the cervix uteri with the vagina posteriorly.

I placed the parts as nearly as possible in their natural position, guarding carefully against any portion of the intestines being included in the lacerated part, at the same time removing as much of the clotted blood as could be got away.

It was evening when she was admitted into the hospital, and after the delivery &c. was completed, and her bed made dry, she was ordered a powder containing ten grains of calomel, and the same quantity of jalap, which remained on the stomach, and operated freely on the bowels.

The following morning the pulse was 130. There was

much tenderness of the abdomen, and she had rested little.

Three dozen leeches were ordered to the abdomen, and a warm bath afterwards ; she was directed also to be stupefied every third hour with flannels, wrung out of boiling water, as hot as could be endured.

Much relief was procured by these means, yet considerable tenderness still remained ; however, by repeating the leeches and warm bath, with stupefying every third hour, the distress subsided in a great measure before the end of the fourth day.

The pulse gradually returned to its natural state ; she became stronger every day, and she left the hospital perfectly well on the twenty-third day after delivery, and returned at the end of three months in good health.

There was no other treatment adopted in this case, but what is stated above, except that the strictest attention was paid to the regulation of her bowels ; and the medicines used for this purpose were, castor oil, infusion of senna with sulphate of magnesia and tincture of jalap, or the common saline effervescent draught, made with the carbonate of soda, with the addition of one ounce of tartrate of soda and potass to eight ounces, given with lemon juice.

Her diet was also attended to, and nothing either difficult of digestion or stimulating was given. Fruit of different kinds, both raw and stewed, whey, gruel, tea, flummery, and, latterly, broths were her chief food.

The bowels, from the commencement, were easily affected by the smallest quantity of medicine.

CASE II.

Anne Woodward, aged 30, was admitted in labour of her sixth child, (a girl) at 6 o'clock in the evening of the 27th of October.

Her labour was reported to have commenced seven hours previous to admission.

When she came into the hospital the uterus was acting briskly, and the head of the child advanced rapidly, so much so, that those who were in attendance thought it would have been expelled every pain. Suddenly, however, the uterine action completely ceased, and considerable debility, great distress of countenance, vomiting, and other symptoms strongly indicating rupture of the uterus ensued.

The head of the child was low down, and pressing on the neck of the bladder, so much so, that the catheter could not be introduced, and as immediate delivery was necessary, the head was lessened, and the child brought away with the crotchet. The uterus assisted strongly in expelling the child and placenta; however, on introducing the hand into the vagina afterwards, a most extensive laceration was found at the junction of the cervix uteri with the vagina anteriorly, and the intestines had fallen through the opening into the vagina.

After returning the intestines carefully, the edges of the laceration were brought as nearly as possible in con-

tact, and the patient was enjoined to remain perfectly quiet during two hours on the couch where she was delivered. She was then cautiously carried to bed, and a powder containing eight grains of calomel and fifteen of jalap, with half a grain of powdered opium, administered.

Following morning, October 29th, 9 o'clock.—Pulse 114 and feeble; rested badly; abdomen distended, and much tenderness on pressure; bowels have not been opened.

To have one ounce of castor oil and one of tincture of jalap immediately; three dozen leeches to the abdomen, and afterwards to be put in the warm bath, and permitted to remain in it as long as she finds it agreeable; the abdomen to be fomented every second hour, with flannels, wrung out of boiling water, as hot as the patient can bear.

The oil and tincture of jalap to be repeated in three hours, if the first had no effect.—9 o'clock, p. m. pulse 120; tongue foul; purgative draught was repeated; bowels have been well emptied; abdomen softer and less painful on pressure.

Stuping to be diligently continued.—30th, 9 o'clock, a. m. pulse 114; tongue foul; got some rest; abdomen full; uterus enlarged, and much tenderness on pressure; bowels open.

Three dozen leeches to the abdomen in the region of the uterus; afterwards a warm bath; stupes to be continued every second hour.

To take the common saline effervescing draught, with the addition of one ounce of tartrate of soda and potass to eight ounces.

9 o'Clock, P. M.—pulse 120; felt relief from the leeches and bath; bowels open; abdomen softer, and much less painful on pressure.

Fomentations and saline draughts to be continued.—31st, 9 A. M. pulse 114; rested tolerably; drank freely; bowels open; uterus still continues enlarged, hard, and tender on pressure.

Three dozen leeches and warm bath to be repeated; stuping to be continued every second hour, and to have three drachms of castor oil in an ounce of pennyroyal water.

November 1st, 9 A. M.—Pulse 114; rested well; drank freely; abdomen soft and free from pain; uterus still hard and enlarged; bowels open.

Fomentations to be continued to the abdomen, and the saline effervescing draught with Rochelle salt to be repeated.

2nd. 9 A. M.—pulse 114; tongue moister and cleaner; rested well; drinks freely and feels easy, except when she moves in the bed; abdomen nearly free from pain; bowels open.

Stupes to be continued occasionally.

3rd. 9 A. M.—pulse 114; in every respect improved since last visit. She gradually continued to amend, and was discharged perfectly well on the 30th of November, one month and two days from the date of her delivery.

Her pulse from the time of delivery was feeble, and continued for the first twelve days, regularly to beat 114 in the morning, and 120 in the evening.

At the end of this time it fell to 98, and gradually became stronger and more natural.

On the 15th and 16th days after delivery, there was a very considerable discharge of unhealthy pus from the vagina, to the amount perhaps of a pint in the first instance, and less the second. It had probably collected about the lacerated part; however, it did not interfere with her recovery, and her strength being supported by nutritious diet, she was not reduced by it.

After the first twelve days, she was liberally supplied with chicken broth, chicken, stewed apples, grapes occasionally, and a little wine. She also got the cold infusion of bark in the form of an effervescent draught; she got no medicine of any kind after the first four days, except the bark draught, and occasionally the saline effervescent draught with Rochelle salt, or three or four drachms of castor oil, to keep the bowels gently open.

I have avoided as much as possible lengthening the detail of these cases, by confining myself to the most important circumstances in each.

The bowels from the commencement in both cases, the reader may observe, were easily acted on by the smallest doses of medicine, after in the *first instance* having been well emptied, which greatly contributed to the favourable termination of both.

In the majority of cases where laceration of the vagina or uterus takes place, the bowels yield with difficulty to the effects of medicine, and in many instances it will be found quite impracticable to purge the patient, with the largest doses of the most drastic purgatives, until death is near at hand, and then the medicines begin to act violently.

It is an object of the greatest importance, in such cases, to have the bowels early opened, and afterwards to keep up their action by mild purgatives, at the same time using every means in our power to counteract inflammation, and no means are more likely to do so, than those already mentioned.

In both cases, it may be observed, that the same plan of treatment was pursued; and it cannot be too strongly recommended to the notice of professional men, that early and active means of counteracting the dangerous and sudden inflammation, that sets in, in all cases of this kind, is a matter of the utmost importance.

In the above instances, when the tenderness of the abdomen was subdued, the dangerous symptoms gradually subsided, and it is singular, that in both it was nearly removed about the end of the fourth, or in the course of the fifth day after delivery.

If possible, the practitioner should avoid letting the child escape out of the uterus, into the cavity of the abdomen in the delivery; sometimes it unavoidably does escape as soon as the accident takes places, but in many instances it may be prevented, by using caution during the delivery, particularly in those cases where we perforate the head.

The opening should be made as much at the side as we can, so as to cause the opposite side of the head to press against the pelvis, and at the same time having an assistant to press strongly on the abdomen of the patient, to keep the uterus as fixed as possible. The perforator

should not be pressed with great force against the head, lest it should suddenly recede.

In cases of this kind attempts have been made to deliver with the forceps, but the introduction of the blades generally forces the child's head out of reach. The child dies also shortly after the laceration takes place, and the dimensions of the pelvis are often defective—all which circumstances prove their inutility in most cases.

When the child escapes out of the uterus into the cavity of the abdomen, it is now the general practice, and undoubtedly the best, to introduce the hand cautiously through the lacerated parts into the abdominal cavity, and bring down the feet of the child, and the sooner this is done after the accident the better.

In such cases, much care should be taken to return any of the intestines that fall through the lacerated part into the vagina, otherwise strangulation may take place.

Some cases occur where the laceration takes place, previous to the mouth of the womb dilating; here it is thought the patient would have the best chance of recovery by opening the parieties of the abdomen, cutting into the uterus, and extracting the child. This is so rare a case, that no instance of it has occurred since I have been connected with the hospital, nor is there an instance of it recorded by Dr. Clarke, in his valuable Abstract, during his seven years Mastership.* Very generally, the mouth of the womb is so much dilated by labour pains, as to enable the attendant to introduce his hand without difficulty.

* See Dr. Clarke's Abstract of the Hospital, Vol. I. of these Transactions.

A third case of recovery from laceration of the vagina, under very similar treatment, occurred lately in a poor woman out of the hospital, and where the laceration was so extensive, that my hand passed into the cavity of the abdomen without the least interruption.

The patient lived until the 26th day after delivery, and was to all appearances recovered from the injury, when she was suddenly attacked with hæmorrhage, and died in *fifteen* minutes. She was walking about for four or five days previous to death, had a good appetite, and in other respects in tolerable health. She was sometimes affected with chilliness in the evenings.

As there was no possibility of obtaining an examination of the body after death, it may be doubted whether this is to be considered a decided case of recovery, although previous to her death, she was considered out of danger by her medical attendants.

Many cases of laceration of the vagina or uterus proved fatal in the hospital in the three last years; but as I am preparing for publication an Abstract of *all the different cases* that have occurred, with some practical observations for the use of students, it is not necessary at present to notice them more particularly.

The number of women delivered in this hospital, during the above period, was about eight thousand.

Lying-in Hospital,
Dublin.

TWO CASES OF
PULMONARY APOPLEXY,

ILLUSTRATIVE

OF THE VALUE OF MEDIATE AUSCULTATION,

BY

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LICENTIATE OF THE KING AND QUEEN'S COLLEGE OF PHYSICIANS, AND ONE OF THE PHYSICIANS
OF THE DUBLIN GENERAL AND COLE'S-LANE DISPENSARIES.

Read August 3rd, 1829.

I have been induced to lay before the Association the two following cases of pulmonary apoplexy, in the hope that one of them, presenting a striking instance of, perhaps, one of the very rarest pathological facts, might not be uninteresting to the profession; and in the conviction that a comparison between the two cases, in a practical point of view, would be productive of very satisfactory results.

The first case to which I would draw your attention is that of John McCleary, a tailor, aged 36—a robust man. Through the past winter and spring I had occasionally to give this man medicines of a purgative nature, and such as have been termed expectorating; the latter, with the intention at one period of removing a bronchitis;

and the former, an habitual costiveness, the effect, as it would seem of whiskey drinking, in which he too often indulged, though, as I have learned, rarely to excess. He applied to me at the dispensary, Cole's-lane, on Friday, June 19th, 1829, complaining that his bowels had been confined for some days, that his cough was increased, his chest somewhat oppressed, and his expectoration since yesterday tinged with blood: his countenance was pale, and his skin covered by a cold clammy perspiration; but as I had observed the latter symptoms occasionally for some months previously, I did not affix any particular value to them. His pulse was feeble, about 90. My friend Dr. Hunt happening to be at the dispensary when this man applied, examined him, and concurred in the propriety of leaving him to his favourite purgative pills, with senna mixture in the morning.

Trusting to what I knew of his history, and to former examinations of his chest, I made no Stethoscopic examination this day, (a circumstance which I shall ever regret,) and we agreed in attributing the exacerbation of his general symptoms, as perhaps we were justified in doing, to some previous excess. I heard no more of him until sent for in haste on the Sunday morning following. I found him dead; and it is worthy of remark, that although two hours had not elapsed since his decease, the rigidity of the body was considerable. A neighbouring apothecary had attempted to bleed him, but unsuccessfully. I was told he had passed the preceding night rather restlessly; however, he had his breakfast of soup and bread, and in the act of putting on his shoes, complained to

his wife of loss of vision ; seemed to faint, and died without a struggle. During Saturday, he had expressed himself relieved by the operation of the purgative medicines, and, what is a remarkable fact in the history of this case, he had expectorated no blood for fourteen hours before death, nor in the agony was there any escape of blood from the mouth or nares, which might lead to a suspicion of the real seat of disorganisation.

Examination forty-eight hours after death, in which I have to acknowledge the valuable assistance of my friend Dr. Law.

The body of a robust man ; putrefaction had considerably advanced, particularly about the neck and shoulders, where a degree of emphysema was produced by it.

HEAD.—Not examined.

CHEST.—The left pleural sack contained about three quarts of blood ; the serum supernatant to a great degree, as in blood allowed to stand after venesection, and the clot in considerable quantity, but very soft, occupying the most dependent portion of the cavity. This lung had contracted no adhesions, and on carefully raising it out of its situation, and dissecting it out by its root, the following appearances presented themselves to us. The superior lobe was one mass of the most perfect pulmonary apoplexy ; the structure of the lung seeming to be absolutely broken up by the excessive effusion of blood into it. The appearance which this disorganised part put on differed, however, in some respects, from the description of pulmonary apoplexy given by Laennec. Speaking of this form of disease, he says,—“ This alteration of structure

" consists in a degree of hardening of the lung, equal to
" that of its most extreme state of hepatization ; but in
" other respects quite different. It is always partial, and
" but seldom engages a large portion of the lung." Now,
in the present case, so far from resembling the firmness of
an hepatized lung, the apoplectic mass was exceedingly
soft and flabby, much more like a clot of blood. It would
scarcely bear to be incised, but broke down under the
scalpel or finger as easily as, and indeed with a striking
similarity to, the coagulum of blood which has stood for
a time after venesection.

It would appear to me, that this softness of the dis-
eased part, in this and similar cases, might be accounted
for by the fact, of so great a quantity of blood having
been effused into the pleural sack, which had thus escaped
coagulation under that degree of compression, to which,
in ordinary circumstances, it is exposed, being confined
by the serous covering which encompasses the lung. This
compression, existing as it does in the great majority of
instances, may, in my mind, principally tend to produce
that firmness generally presented by specimens of pul-
monary apoplexy ; but being to a great degree removed in
the present case, by the laceration of the pleura, an op-
posite effect was produced.

Again, the entire superior lobe of the lung was en-
gaged, so that I should be rather inclined to consider this
as an instance of the uncircumscribed form of the disease,
noticed by my friends, Drs. Graves and Wm. Stokes ;
for the line of separation between the superior and middle
lobes, was the exact line of demarcation between the dis-
eased and sound lung.

But what most attracted our attention, and, in my mind, gives its peculiar interest to this case, was, that in the superior and posterior part of the affected lobe, we found a laceration of the investing pleura, of about one inch in length, and half an inch in breadth, with very irregular edges, and immediately opening upon the point where the sanguineous effusion into the substance of the lung seemed most intense, and where we might naturally expect the greatest violence to be offered to its serous covering. This was evidently the source whence the blood, shed into the pleura, had come; for on examining as accurately as possible, we could discover the rupture of no vessel.

In this, and similar cases, are we to consider that the blood is the product of a general exhalation from the vessels of the part engaged? Are we to refer it to the rupture of a vessel of any considerable magnitude in the lung's substance? Or are we to attribute it in any, and in what, degree to that sudden expansion of the blood itself, to which Laennec refers, as being probably an influential cause?

This lung in other respects was healthy, though generally congested, as indeed was the right. The latter had contracted several old adhesions. The heart was sound and empty of blood. Blood of the body generally fluid.

ABDOMEN.—On cutting into the peritoneal cavity, a violent rush of air ensued. The intestinal tube was much inflated by a fœtid gas.

LIVER smaller than natural; slight patches of chronic inflammation here and there spread over its external sur-

face; gall bladder contained a quantity of light coloured bile; mucous coat of the stomach presented generally an injected appearance, with patches of a more intense red.

I shall now proceed to detail a few of the particulars of the case of Margaret O'Neil, room-keeper, aged 56. November 10, 1828.

For the past two months has complained from time to time of cough, arising from chronic bronchitis, accompanied by a costive habit of body. Those symptoms were always relieved by purgative medicines. For some days past her bowels have been confined; her cough increased; yesterday there was considerable general uneasiness, and last night she was seized with a profuse haemoptysis, which continues. Pulse 110, weak and small; countenance pale, and expressive of great anxiety. On examining the chest, the following were the indications:—

PERCUSSION.—The entire chest sounds well, save the left subclavian region, which is dull.

AUSCULTATION.—The respiratory murmur in the greater part of the superior lobe of left lung is either absent or very feeble; in points, a well marked rale crepitant is heard, and more particularly around the part where respiration is absent: puerile respiration in the rest of same lung, with heavy mucous rale about the leading bronchi. In the right, in spots the rale sonore is heard.

From this examination I could not hesitate in making my diagnosis, pulmonary apoplexy, and despite the age and considerable debility of the poor woman, I took sixteen ounces of blood from her arm, which induced faintness. I was encouraged in my decision to bleed her by

observing, that the strength of the heart's action, as examined by the stethoscope, was disproportionate to the smallness and weakness of the pulse—an observation which, I well recollect to have first heard made, and in more instances than one practically illustrated by Laennec in his clinical wards of La Charité, and which I believe never should be omitted in deciding on a venesection in all cases of haemorrhage. I prescribed a brisk purgative bolus and draught; and after their operation, a cough mixture, with three grains of tartar-emetic to the twelve ounces; two table spoonfulls to be taken every second hour. The strictest abstinence was enjoined.

11th.—Haemoptysis greatly diminished; expresses herself relieved; bowels well freed, and she tolerates the emetic-tartar. Stethoscopic examination indicates no particular change since yesterday; pulse fallen to 100; very weak.

A purgative draught, and I raised the dose of emetic-tartar to six grains in the twelve ounce mixture.

12th.—Haemoptysis has almost ceased, the sputa being only at times slightly tinged with blood. To-day the left subclavian region sounds clearer on percussion, and the rale crepitant is heard more feebly all over it; bowels well freed; slightly sickened by the mixture, but has taken it all; pulse 96, weak; demanded food; allowed a small quantity of light chicken-neck broth; mixture of yesterday to be repeated.

13th.—Has had a very good night, coughs seldom, sputa catarrhal; slight rale crepitant still heard in points.

Same prescription; two purgative pills at night.

14th.—Rale crepitant entirely disappeared, though on percussing the two sides, the left still sounds the duller, yet the difference is trifling. Same prescription.

15th.—Found her sitting up; still very weak; appetite improved; to indulge it, but with the greatest caution. To omit the tartar-emetic to-day, and have two purgative pills every night for three nights.

Her convalescence from this day was uninterrupted. Both from the stethoscopic examination, and the course the disease ran in this case, I conceive there can be but little doubt of the fact, that the superior lobe of this patient's left lung was in a state of pulmonary apoplexy, and that the attack was of a very serious nature, demanding the promptest interference of art.

The first of these two cases presents to our view a pathological fact of importance and great interest. It is one of, I believe, the very rarest occurrence. Laennec admits the possibility of such a thing taking place, but he never met it; nor am I aware of any such case being recorded in the annals of Medicine, save one by Corvisart, in his translation of Avenbrugger's work on Percussion.

In comparing the two cases together, we find a striking similarity in the general symptoms presented by each; except that in the former, the fatal case, the haemoptysis was very slight; and it would seem to me that this very circumstance forcibly points out to us the value, nay, the necessity of a stethoscopic examination, to the formation of an accurate diagnosis. For it is undeniable, and the case of McCleary is a remarkable instance of it, that even

a fatal degree of pulmonary apoplexy may be present without any, or with but very slight, haemoptysis. Though the general symptoms, on which I am satisfied an unfounded reliance is too often placed, as well in other diseases of the chest as the present, by no means, in my opinion, indicated the presence of so formidable a disease; yet am I convinced, that had I made a careful stethoscopic examination of McCleary on the day he first presented himself to me at the dispensary, and not contented myself with general symptoms, I should have detected some traces of sanguineous engorgement of the lung, sufficient, unquestionably, to have induced me to adopt a line of treatment different from that pursued.

Granting the possibility that all the symptoms which this man presented on Friday, including the haemoptysis, might be present without the existence of pulmonary apoplexy, and consequently that a stethoscopic examination on that day might have thrown no light on the case; yet would I ask, is it not much more probable, nay, does it not amount almost to a certainty, that the disease had been for some days making its insidious advances; that the day he was seen at the dispensary points of pulmonary apoplexy already existed, and that the excessive effusion of blood, which was so violent as to rupture the pleura, and induce fatal haemorrhage into its cavity, was superadded to previously existing disease; the sudden effect of some unknown cause, perhaps a rush of blood to the superior parts of the body, to which the attitude in which he was seized, namely, stooped down to tie his shoes, was most favourable? And if we admit this, which, I must con-

fess, the whole bearing of the case almost demonstrates to me, a stethoscopic examination made on Friday would have enabled me to form a diagnosis, which would, no doubt, have suggested the employment of curative means, calculated if not entirely to avert the attack of Sunday, at least to render it, I think it but fair to infer, amenable to active treatment.

In the second case, we find that where the real state of the lung, which I believe the stethoscope alone affords us the means of ascertaining, was early detected, and active means were promptly applied, this disease, so fraught with danger, was, in six days, completely and effectually overcome.

I deem it needless to trouble the Association with general observations on the treatment of this formidable, and by no means unfrequent disease; but I would beg leave to offer a remark on the subject of blood-letting, unquestionably the most powerful mean we possess to combat and overcome pulmonary apoplexy. I believe I may state, that in few diseases where it is beneficial, is its employment more markedly contra-indicated in the great majority of cases by general symptoms. Of course we meet with exceptions to this, where the general plethora, &c., demand bleeding at the hands of any man, however ignorant he may be of the real disorganization; but on the contrary, for one such case, how many does every practical man meet, where almost every symptom would seem to contra-indicate the most effectual mean of relief? It is too often argued, that by opening a vein we merely add to the existing evil; that we are still abstracting from

that source of strength which has been already so seemingly exhausted, and which may be hereafter so much wanted ; and the practice founded on such reasoning, I fear, too often consists in the exhibition of tonic and astringent medicines. This is a most fatal error. A copious venesection seldom indeed amounts to nearly the quantity of blood which a patient, labouring under pulmonary apoplexy, will expectorate in a few minutes, and this latter is infinitely more debilitating than the former. Besides, the loss of blood in one way, venesection, tends to diminish the exciting evil, and promote its resolution, while the other, on the contrary, only adds to the disease, and increases the danger. No doubt cases will present themselves to us, where, from their being of some standing, the patient may be so spent by the frequency and extent of the hæmoptysis, that to have recourse to general blood-letting might be a hazardous experiment : and I conceive it no easy matter to determine with justness what constitutes this condition. Decidedly, an account of his own feelings of debility given by our patient is not sufficient, and we all know how very deceitful an index the pulse is. When we hesitate as to the propriety or impropriety of blood-letting, as I have before stated, I believe our very best guide, indeed the only one in which any confidence is to be placed, to be the comparative strength or weakness of the heart's action, as examined by the cylinder. If it be strong, firm, and regular, no state of pulse nor seeming prostration of strength of our patient, should deter us from using the lancet ; but if the contrary, we should then prefer having recourse to other means, which I shall not now dwell upon.

To return to the two cases under consideration.— McCleary's slight haemoptysis on the day I saw him with Dr. Hunt, I distinctly recollect, suggested to us venesection; but on reviewing all the symptoms and general appearance of the man, which I have attempted briefly to describe, we never hesitated in deciding on omitting it. In O'Neil's case, though the age and debility of the patient combined even more strongly to deter me from it, yet when I had the physical certainty of the mischief that was present, I never hesitated to use my lancet, and the event showed the propriety of my doing so.

The principal points which I would urge on the attention of the Association are, whether it is their opinion that the Pulmonary apoplexy in McCleary's case was *bonâ fide* present when he was seen on Friday? Whether the general symptoms present on that day were sufficient, of themselves, to establish the existence of so formidable a disease, or must we not rather of necessity apply to mediate auscultation for its detection? And, if it existed, would the employment of active treatment on that day and Saturday, have averted the fatal attack of Sunday?

CASE OF MELANOSIS,

BY

JOHN CRAMPTON, M. D.

PROFESSOR OF MATERIA MEDICA, PHYSICIAN TO STEVEN'S-HOSPITAL, AND HONORARY FELLOW
OF THE COLLEGE OF PHYSICIANS.

Read, 7th September, 1829.

FOR the notes of the following case, I am indebted to my friend Mr. Robert Todd, the resident clinical clerk in the hospitals of the House of Industry.

Daniel Browne, aged 34, a weaver, was admitted into the Whitworth Chronic Hospital on the 28th June, 1828. He laboured under ascites to a great extent, the abdomen being unusually prominent, and his disorder was of six years standing. Fluctuation was distinctly perceptible, but a part of the distention evidently arose from solid enlargement of the liver; the margin of this viscus could be traced extending transversely into the left hypochondre, which it filled completely, and downwards to within an inch of the spine of the ilium on both sides, and fully above two inches below the umbilicus. Several tumours were felt on its surface, of which the patient himself was sensible. He suffered no pain, excepting the distress occasioned by the incumbrance of the

tumid organ, and the distention of the abdominal parietes ; lies on either side, but expresses himself easier when he sits up ; his breathing is laborious, but the thoracic organs appear sound, as was evinced both by percussion and auscultation ; his bowels were confined, except when relieved by medicines ; passes very little urine, and that high coloured ; has been very intemperate in drinking spirits to excess.

The case I considered to be one of tuberculated liver enlarged to a great extent, of long standing, with consecutive dropsical effusion, and no expectation was entertained as to a chance of recovery. Remedies were of course prescribed to relieve his bowels and promote the secretion of urine, but their effects were only temporary.

On the 26th July he was in great distress from the enormous distention of his abdomen, and he earnestly requested relief from tapping ; his entreaties were complied with, the paracentesis was performed, and four gallons of fluid were removed, with instantaneous relief, and he spent the night comfortably ; but the following day he complained of *soreness inside the belly*. At this time the enlarged liver with its tumours could be felt still more distinctly, in consequence of the abstraction of the fluid.

From this period until that of his death, which took place a few days after, he gradually sunk, the pain and soreness in the abdomen increasing, unable to derive any benefit from the treatment adopted. The immediate cause of his death appeared to be inflammation of the peritoneum ; this as frequently happens after tapping, commenced at the puncture, and spread to a considerable extent over that membrane.

His body was examined four hours after death.

EXTERNAL APPEARANCES.—Considerable emaciation; evident fluctuation in the abdomen; margin of the liver can be traced as described in the history of the case.

THORAX.—The pleurae were studded with black tumours, each about the size of a pea; when cut into, they resembled coagulated blood; the lungs and bronchia were perfectly sound, and the heart natural.

ABDOMEN.—On opening this cavity upwards of a gallon of fluid was discharged. The surface of the contents of the abdomen was covered with immense flakes of lymph, which appeared quite recently formed. This adhered every where in bands, and glued the intestines together and to the liver. The peritoneum was of a brownish colour, covered with a false membrane, which was easily scraped off with the knife.

The mucous membrane of the stomach was very vascular, that of the intestines did not present any thing very remarkable, their serous covering, however, was much thickened.

Nearly two thirds of the abdominal cavity were occupied by the liver; the right lobe extended up into the corresponding side of the thorax, compressing the lungs on that side to half their natural dimensions. This immense viscus stretched across and occupied the whole epigastrium, and reached fully two inches below the umbilicus to within an inch of the spine of the ilium on both sides. On its surface it was thickly studded with round black tubercles, varying in size from that of a small plumb to that of a middle sized apple. When cut

these tubercles presented a soft pulpy matter, easily broken down, and resembling Indian ink in colour, staining every thing which came in contact with it. The interior of the liver was also studded with these black tubercles, so that when cut, the surface resembled a slice of plum pudding.

The liver weighed 19 pounds; its circumference was equal to 3 feet 8 inches. Transverse diameter of the under surface 15 inches; antero-posterior diameter along the horizontal fissure 10 inches; that of the right lobe $12\frac{1}{4}$ inches; that of the left lobe $11\frac{1}{2}$ inches.

The spleen was healthy in structure, but smaller than natural, having been compressed by the liver.

The left kidney contained several calculi in separate cysts, some black, like coal, others of the uric acid kind. Two similar ones were seen in the right kidney. These calculous concretions were found in the tubular portions of the kidney.

A drawing has been taken of a sliced portion of the liver, and some pieces of that altered viscus have been preserved in spirit.

Melanosis is not a common occurrence with those who are in the habit of examining bodies, nor is it accompanied by any symptoms which would seem to form a diagnosis between it and other changes of structure, which we more frequently meet with in the lungs, liver, and other important organs. The older writers have described some cases of it, but they confounded this morbid production with Schirrus, Cancer, or Carcinoma, and in some instances, with the black matter found in the healthy lungs of elderly people.

The name melanosis was first given it by Laennec, the talented author of the "Auscultation Mediate." He described this affection in an unpublished paper, which he presented to the Ecole de Medicine in the year 1806. He afterwards in his book, published in 1819, considered it a *tissu accidentel*, that it was first a solid texture, and afterwards became softened and was converted into cavities, like other tubercular formations, but that its presence was not denoted by any peculiar symptoms. This opinion of Laennec has been since contested by later writers. Breschet gives some account of melanosis in Majendie's Journal for October, 1821. There is also one by Drs. Cullen and Carson in the 1st vol. of the Edin. Medic. Chir. Transactions. An excellent description of melanosis in different organs is published by Mr. Fawdington, London, 1826, where he exhibits all the varieties of the disease. A description likewise may be found in Mr. Wardrop's edition of Dr. Ballie's works; but Andral gives a more complete view of the subject in the Dict. de Scienc. Medic. and a still later one in his precis D'Anatomic Pathologique, 1829. Andral objects to its being denominated a *tissu*, as it is completely inorganic, and may exist in different forms—1st, in masses, and these masses either with or without cysts, derived from the cellular texture; 2dly, infiltrated or diffused through textures, so as to be incorporated with another tissue; 3dly, spread out in solid strata or layers, especially on the serous members; and 4thly, in a liquid state. Examples of this kind may be seen on the mucous membrane of the intestines, where they have been observed covered with an inky

liquid secretion after inflammatory affections, and in the cavity of the abdomen after chronic peritonitis. Immense melanose collections have been found in the abdomen of horses, according to the observations of Tronsseau, Leblanc, and Dupuy.

In point of chemical analysis, the composition of melanose collections do not differ from that of the blood; albumen, fibrin, a carbonaceous matter, oxyd of iron, and the usual saline ingredients of that fluid being found in both, according to the experiments of Messrs. Thenard, Clarion, Lassaigne, Barruel* and Foy. Mons. Barruel considers the colouring matter of the blood the furnishing material from whence the matter of melanosis proceeds. Thus far pathological anatomy, aided by chemistry, leads us as to the nature of these extraneous or accidental developments; but as to the mode of their formation, or the way in which this perverted secretion takes place, we have little to offer but conjecture.

* Vid. Andral. Anat. Path. tom. 1, p. 455.

JOHN CRAMPTON.

Kildare-street, August 1829.

CASE OF
PERFORATION OF THE STOMACH,
AND OF
THE ESCAPE OF A LUMBRICUS
INTO THE
CAVITY OF THE ABDOMEN,
BY
JOHN CRAMPTON, M. D.

PROFESSOR OF MATERIA MEDICA, PHYSICIAN TO STEVEN'S-HOSPITAL, AND HONORARY FELLOW
OF THE COLLEGE OF PHYSICIANS.

Read 7th September, 1829.

THE following case presenting rather an unusual occurrence, may, perhaps, be considered worthy of record.

Jane Elders, aged 50, was sent to the Hardwicke Fever Hospital on the 24th November, 1828, as a fever patient. She had been ill for several days; bowels entirely constipated for a week; vomiting, intense pain in the epigastrium and other parts of the abdomen, with inflation and tenderness, the tongue dry, the pulse sharp, small, and frequent: these were the most urgent symptoms.

On the application of leeches, with suitable aperients, the vomiting ceased; the bowels were freed, and the tongue became clean, but red and smooth. On the 5th day after

admission, the pain, tenderness on pressure and frequency of pulse continued, attended now with diarrhoea and singultus, but no vomiting.

After a few days the diarrhoea ceased, but in other respects there was no amelioration ; on the contrary, her debility was excessive, and she could lie only on the right side ; faintness occurred on attempting to sit up. Her appearance was wasted and hectic ; she enjoyed however the refreshment of a good deal of sleep. From this time she remained nearly in the same state, until death put an end to her sufferings on the 7th of December, when she expired quietly without a struggle.

On examining the body 12 hours after death, the following appearances presented themselves :—

On cutting into the abdomen a quantity of puriform fluid gushed out, which on examination appeared to proceed from the inflamed peritoneum.

The liver on its anterior surface was covered with a false membrane secreting pus, and which caused preternatural adhesions to the diaphragm, and to the adjacent viscera.

The gall bladder was much thickened, the serous covering being greatly inflamed, and covered with a layer of coagulable lymph.

The whole peritoneum was intensely inflamed, and had thrown out coagulable lymph, by which the intestines were glued together.

On opening the cavity of the thorax, and exposing the heart, it was proved that the inflammation had spread to the external membrane of the heart, and to the internal

one of the pericardium. Pus was effused in small quantity, and recent and easily separable adhesions were formed by the coagulable lymph thrown out on these surfaces.

The quantity of puriform fluid effused into the cavity of the abdomen exceeded three quarts. The liver was natural in structure; the spleen small but healthy, and it adhered to the left edge of the liver. The gall bladder contained a small quantity of viscid bile.

Upon pressing the liver downwards to push out the matter contained in the abdomen, a large lumbricus worm was squeezed out from the space under the liver occupied by the stomach. Upon examination a round perforation was discovered about the middle of the lesser curvature of the stomach. Externally its margin was smooth and defined, and lined by a membrane which appeared to be a continuation of the mucous membrane of the stomach; internally its margin was also defined, and surrounded by a hard elevated edge, irregular, somewhat triangular, enclosing an aperture into which the worm can be inserted. On the top of this elevated margin one small round ulcer was observed, about the size of a pea. The pylorus was perfectly healthy, the folds of the mucous membrane of the stomach were much larger than usual; but the membrane, except round the perforation, retained its healthy colour and consistence.

The whole tract of the intestinal canal, both in its serous and mucous coats, was intensely inflamed. Its entire course was carefully examined, and although containing a quantity of fœces, no worm could be detected.

The lungs and heart in its interior were perfectly healthy; the brain and its membranes in the natural state.

This patient was in such a state of agony on her admission into the hospital, that little more than an outline of the symptoms could be collected, but nothing as to the order in which they came on.

We may presume she laboured under organic disease of the stomach, which led to the perforation of that organ. But whether all the membranes had actually given way at this juncture, it is not easy to say with confidence.—Presuming the opening was in existence fully formed, the inflammation of the peritoneum might have been induced by the irritation from the worm crawling through the orifice; or the ulcer might not have penetrated the peritoneal coat of the stomach, although it had eroded the others; and the former might have burst during the severe efforts of vomiting, and that thus after the rupture, peritonitis was the first link in the fatal assemblage of symptoms which occasioned her death. The inflammatory disorder of the peritoneum might, no doubt, have taken place from other causes, and the existence of the perforation and the presence of the worm, might have been merely concurrent accompaniments.

It is curious to observe that none of the contents of the stomach had escaped into the abdominal cavity; their egress was probably prevented by this circumstance, that during the efforts to vomit the perforation appeared to be pressed close against the liver, which acted as a valve. But the *lumbricus* had sufficient opportunities to penetrate through the aperture to the place where it was found imbedded in a quantity of pus immediately under the liver. Had the contents of the stomach found their way

into the abdominal cavity, the progress to dissolution would have been more rapid. In a case of this kind which I related in the 1st vol. the old series of these Transactions, death took place in the short period of twelve hours.

The more probable solution, as to the order of the symptoms appears to me to be, that the worm excited the first point of irritation in the peritoneum, a membrane unused to the contact of any extraneous body, and highly susceptible of any new irritation ; that inflammation next ensued in a limited portion of that membrane ; that this gradually increasing, whilst the woman neglected any means of relief, became more diffused, and ultimately extended to the serous tissues in the thoracic cavity, involving even the pericardium and heart in its ravages. Suppuration ensued in both cavities, and the powers of life then soon were overcome in a person who suffered under the combined influence of a severe uncontrolled acute disease, and a constitutional chronic disorder.

JOHN CRAMPTON.

Kildare-street, 1st Aug. 1829.

CASE OF AN
ANOMALOUS STATE OF THE HEART,
BY
JOHN CRAMPTON, M.D.

PROFESSOR OF MATERIA MEDICA, PHYSICIAN TO STEVEN'S-HOSPITAL, AND HONORARY FELLOW
OF THE COLLEGE OF PHYSICIANS.

Read, 7th September, 1829.

IN a former volume of these Transactions, I related two cases of open foramen ovale in adults, and hazarded a conjecture that this state of the heart is oftener * to be met with than is supposed. More instances of that kind have since occurred to me in my examination of morbid bodies; one however, in which this anomaly, in conjunction with others which are still more unusual in the human subject, having lately presented itself, I am induced to offer it to the Association. The notes of the case, and the appearance recorded, have been collected with great industry by Mr. Robert Todd.

In a boy 10 years of age, who died dropsical, accompanied with symptoms of disorder in the heart, intimated by palpitation, a pale livid color, and a very distressed state of respiration; the following anomalous condition of the principal organ of the circulation was found.

* Vol. V. old series, p. 79.

On opening the thoracic cavity, the heart was seen to preserve its natural situation, its shape however attracted notice; the upper part of the right ventricle being pushed out in such a manner, as to present externally somewhat of a sugar loaf shape. On introducing a finger into the pulmonary artery, this vessel was found to be considerably contracted at its entrance into the heart, and appeared to be *destitute of valves*. A finger introduced into the aorta entered freely into both ventricles.

The left ventricle was opened by cutting from the orifice of one of the pulmonary veins, thus laying open auricle and ventricle together. It was then seen in the auricle, that the *foramen ovale was open*. The ventricle was perfectly natural, with the exception of a slight increase in the thickness of its walls; it communicated in the usual way with the aorta, the valves of which were perfectly natural, and it also communicated with the *right ventricle*, in consequence of a deficiency in the upper part of the septum.

On slitting down the right side of the heart, from the superior vena cava, nothing remarkable was observed in the auricle, except its communication with the other auricle through the *open foramen ovale*.

The right ventricle was dilated opposite the deficiency in the septum, into a ponch which corresponded with the sugar loaf projection observed externally. The pulmonary artery was found to communicate with a separate cavity, bounded by distinct walls, which however was attached to the right ventricle, and communicated with it by means of an opening capable of admitting the little

finger, formed under the columnæ carmæ of the ventricle. The lining membrane of this cavity, as well as of the pulmonary artery, was spotted with lymph in several places, which, in the artery, assumed the appearance of warty excrescences.

The pulmonary artery was perfectly destitute of valves; its lining membrane, at the usual situation of the valves appeared a little puckered, constituting the contraction felt on the introduction of the finger. Above the contraction the artery was considerably dilated, and it was in this dilated portion that the warty excrescences were situated.

The symptoms in this boy, James Caffry, who was admitted into the Whitworth Hospital, 25th August, 1828, were the following:—

Complexion livid and sallow; circumscribed flush on the cheeks; face, legs, and whole surface of the body extensively anasarcaous; he had been subject to palpitations from his birth, with pain in the left side; breathing very laborious; could not lie on either side, but was easiest sitting up. Pulse at the wrist 140; small and synchronous with the heart's action, but subsequently both gave an irregular and intermitting beat. On inspecting the thorax externally, an obvious difference was observable, and on measurement the right side exceeded the left by half an inch.

On percussion the thorax sounded tolerably well throughout. With the stethoscope, the respiration was generally pure; inferiorly and anteriorly at the left side it was completely masqued by a very loud *bruit de soufflet*, which

was also distinctly audible in every part of the thorax and in the neck, but not over the brachial or femoral arteries. The noise also masqued altogether the sound of the heart's action, but its impulse was felt with the instrument. At times, during the course of the treatment, the impulse was tremendous. The *bruit de soufflet* some days was more overpowering; on others it was less so, according to the state of quietness of the patient, or the reverse. On one day a slight degree of *bruit de lime* was heard.

He lived until the 21st September, the dropsical effusion was in part removed, and the heart's action was less tumultuous for a considerable time before his death. A few days previously to this event, the palpitation returned with increased force, whilst his strength declined, and he suffered from diarrhœa. From these symptoms he experienced partial and temporary relief after a profuse perspiration. At length he sunk, worn out and exhausted; he signified however that he did not suffer pain. It is quite unnecessary to recite the detail of the treatment in a case so hopeless, as it was merely palliative.

The chief interest in the preceding record arises from the consideration, that life in the human subject should have been maintained for ten years; with an organ so imperfect, and apparently so inadequate to the performance of its functions. In some respects, the heart in this case may appear to be an exuberant production, being furnished with three ventricles; in others rather as an instance of failure in point of formation, nature having been arrested in the completion of the valvular structure,

to which, however, an effort was made in the puckering of the inner membrane of the pulmonary artery. The want of closure in the septum is another instance of failure. The case then may come under the denomination of atelocardia, nature not having perfected her work in finishing the heart of this boy.

Those who have observed the phenomena and procedure of foetal life, and have ascertained the periods when each organ begins to be developed, and when it comes to perfection, know that the heart at a certain time is nothing more than a dilated vascular pouch, without any division into auricles or ventricles, destitute also of any valvular apparatus. These additional improvements are superadded at subsequent periods of gestation. Should the nutrition and growth of these organs not proceed according to the usual rules, or should nature fail in its accustomed developments, the result is, some imperfection or want of what is necessary to the completion of her work. This appears to have been the predicament of the boy whose case is related. The heart was imperfect at birth; its full evolution had not taken place. The auricles and ventricles had not accomplished their full share of separation, nor was the valvular structure fully consummated. Still this arrangement of the heart was not altogether incompatible with the continuance of life for ten years. The machine, doubtless, was incomplete, but was in many respects analogous to that in certain classes of animals, as some of the amphibia, and fishes with one auricle and one ventricle. For two auricles with a large open passage may be considered as one, and two ventricles with the additional

ponch, all in communication, must be estimated in a great measure as one cavity. The mechanism of the circulation then was more simple than with a perfect heart; the triple ventricular* cavity furnished both the pulmonary artery and the aorta at the same instant, and the return of the blood from the lungs and from the vena cava came synchronously into the same compound auricular receptacle. Still, however, even the partial separation of the auricles and of the ventricles must have contributed to give the different currents of venous and arterial blood a distinct direction, and prevent, in some degree, that complete admixture of the black and red portions of that fluid, which occasionally must have happened, and which in the end led to such embarrassment and distress. The third ventricular ponch probably assisted in giving a separate route to the venous blood into the pulmonary artery, by affording a free passage. In a state then of perfect quietude of mind and body, the sanguineous currents took their respective channels, although in contact with each other; but reverse these circumstances, and all became again confusion. The occurrence of any pulmonary disorder must obviously have added much to the ordinary perturbations occurring constantly in the circulation. At all events the existing causes, independent of any recent attack in the lungs, were quite sufficient to lay the foundation of dropsical effusion, which gradually infiltrating the pulmonary tissue, thus presented further embarrassment in the circulation, and additional distress in the

* Like the heart of the crocodile with three ventricles anastomosing all.

breathing. It is not then surprising that this poor boy sunk, the powers of life being no longer able to endure the accumulated results arising from disproportion and imperfect formation.

JOHN CRAMPTON.

Kildare-street, 1st Aug. 1829.

Note.—Another case has just occurred to me (Feb. 1820,) whilst this paper is at press, of an elderly woman who died dropsical after peripneumony. Considerable distress in her breathing, with unusual lividity of the lips and paleness of the face; a weak, rapid, and irregular pulse were the chief symptoms. Before death I ventured to predict *an open formam ovale*, with a dilated and flescid heart. On examination after death, my prognostic was verified in both respects.

OBSERVATIONS
ON THE
USE OF INSTRUMENTS,
IN CASES
OF DIFFICULT AND PROTRACTED LABOUR,
BY
JOHN BEATTY, M.D.

LICENTIATE OF THE KING AND QUEEN'S COLLEGE OF PHYSICIANS IN IRELAND.

Read 5th October, 1829.

IN every case of Midwifery, the chief object to be attained by the practitioner, should be the preservation of the lives of both mother and child entrusted to his care. The great majority of cases require no extraordinary assistance, and the duty of the accoucheur consists principally in watching the progress of the efforts which nature makes, and guarding against any unfavourable accident, or deviation from the ordinary course. Unfortunately, however, some few cases do occur, in which from particular circumstances, instrumental aid is required, and while we may lament the necessity for such interference, it is our duty diligently to inquire into the merits of the means proposed to assist delivery, and to select those that we find

most likely to effect the purpose already mentioned, that of preserving our patient and her offspring.

It is of importance that every man practising midwifery should avoid as much as possible the use of instruments in delivery ; for it is certain, that if he suffers his patience to be too readily exhausted, or yields too easily to the suggestions and alarm of the patient, or her friends, he will frequently be induced to promote delivery too soon, very much to the injury of the patient, and consequently to his own character. On the other hand, he has an important duty to perform in judging of the necessity, and the proper time for using instruments, and the kind suited to each particular case, for as much or more mischief may be done by delaying their use when absolutely required, as by having recourse to them too soon. In fact, in this, as in most other situations, the man who has patience to watch, judgment to discriminate, and firmness to act, will be the best qualified to perform the duties required of him.

Having endeavoured, during a long and actively employed life, to regulate my practice by such principles, I have formed the following conclusions respecting the comparative value of the different instruments used, in long protracted or difficult labours. And I am induced to give a faithful account of my own experience, and of such means, as I have occasionally employed, because I have reason to know that my opinions on the subject, differ from those of some of the most eminent, and justly esteemed members of the profession in this city.

I do not propose to enter into a detail of the causes and

nature of long protracted and difficult labours; these are so fully treated of, and explained in all works on midwifery, that it would be useless to repeat them at present; but I may observe, that the cases in which mechanical assistance is required, may be comprised in two divisions, 1st. Those where there is a disproportion between the head of the child, and the passage through which it must come; and 2dly. Those in which, although no mechanical impediment exists, the expulsive powers of the mother are not sufficient to accomplish the delivery.

Under the former will be found those caused by the deformity of the bony parietes of the pelvis, and by disease or rigidity of the soft parts, as well as unnatural size of the head of the foetus, face presentations and transverse position of the head. And under the latter, those in which delivery is delayed by general weakness of the patient, haemorrhage, frequent faintings, convulsions, great exhaustion, fever, &c.

To assist delivery under such circumstances, two classes of instruments have been devised; 1st. Those by which extraction may be effected without injury to either mother or child; 2dly. Those by which the life of the latter must necessarily be sacrificed. I need scarcely remind the members of an enlightened and humane profession, that the adoption of the latter alternative, is a step calling for the most serious consideration, and one that involves an awful, and heavy responsibility. The value of human life is not to be estimated by the age, nor is there in the eye of the law, either human or divine, any distinction between that of the octogenarian and the child unborn.

It matters little, therefore, what the nature of the situation is, in which a fellow-being committed to our care is placed, whether it be a fever striking him in the prime of life, or a disease requiring the performance of a capital operation, or the perils attending his first entrance into the world, it is our bounden duty to employ such means as will best insure his safety.

Let it not be imagined that by these observations I would inculcate, that the well-being of the mother is to be overlooked in endeavouring to save the child; far from it, the very nature of the sentiments points out the contrary; but what I desire to maintain is, that the life of the child in *utero*, is as sacred as if it had breathed, and walked, and that its destruction can only be conscientiously resorted to, when every other means by which it, and its parent, might be saved, have been fairly tried and found inefficient.

The perforator and crotchet were the instruments employed formerly, and so late as 1746, "Lamotte states, "that when he began practice he found several old surgeons, who, when they were called to attend women in labour took their instruments with them, and brought away the child by their means. A woman being in labour, a day and a half, or two days, was more than sufficient to set them at work, and this was the only resource they had in all cases indiscriminately. So universal had this practice become, that as Dr. Chamberlain observes, it gave rise to the report that whenever a man came, the mother or child, or both must die."

Daventer had no knowledge of any other instrument,

and states in his quaint language, “that whenever the head of the infant falls down into the narrow cavity of the pelvis, and is there, so that the least descent is not upon the force of the pains, and all remedies have been tried in vain, the infant is to be handled and drawn out as a dead one.”

Fortunately for the character of the profession, as well as for the cause of humanity, a revolution was effected by Chamberlain, who by the introduction of a harmless instrument, gave rise to the investigation of the true nature of difficult labours, and by the success attending its use, in his hands, and those of his three sons, fully proved the value of the principles on which it was constructed, and the certainty with which its intention might be accomplished.

The effect of Chamberlain’s invention of the forceps was, to bring about a classification of difficult labours, and to lead practitioners to discriminate between cases in which the life of the child must be sacrificed, and those in which it could be saved. Since his day, every systematic writer on midwifery has bore ample testimony to the value of the instrument, and from a collation of the evidence, it may be fairly inferred, that the employment of the perforator and crotchet should be the practitioner’s last resource. Thus Smellie* says,—“*if you can neither turn nor deliver with the forceps*, the head must be opened, and delivered with the crotchet:” also he adds—“indeed this method formerly was the practice, and is still in use, with those who do not know how to deliver by the forceps.”

* Vol. I. p. 153.

Chapman,* after reflecting on the too frequent use of the perforator and crotchet, states, “that most births “may be accomplished without instruments by the as-“sistance of the hand only, or, where instruments are “really required, by the help of the forceps, which “are not only perfectly safe and convenient, but ex-“tremely useful, and in some cases absolutely necessary.” And again he says, “all I shall say of this noble instru-“ment (the forceps) must necessarily fall short of what “it justly demands; those only who have used it, and “experienced the excellency of it, to their own advan-“tage, and the security of their offspring, can be truly “sensible of its real worth. As I think myself bound to “recommend it strongly to the gentlemen of the profes-“sion, I shall omit no opportunity of endeavouring to do “it justice.”

Sir Fielding Ould † says, “if there be not a certainty “of the child’s death, the best adapted instrument is the “forceps, which is in general use all over Europe;” and again he asserts, that “with attention and care the infant “will never be destroyed by this instrument.”

Mr. William Dease, ‡ of this city, whose practice was extensive, and whose discrimination and judgment were universally admitted, says, “that the forceps, prudently “applied, is an instrument, which in good hands, may “safely effect delivery in difficult labours, is what every “practitioner must have been repeatedly convinced of.”

Doctor Merriman § says, “the assistance to be afforded “in difficult labours will frequently be that of the forceps,

* Vol. I. p. 72.

† p. 153.

‡ p. 40.

§ p. 13.

“ for unless in cases of distorted pelvis, the head of the
“ foetus will frequently have sunk low enough, to allow
“ the ear to be felt.”

Dewees,* after some judicious observations upon the fallacy of arguing against the use of any thing from its abuse, says, “ let those who are to practice midwifery become well acquainted with the elementary parts of their profession, and then gradually proceed to the more difficult operations connected with it, and the clamours against the use of the forceps will in a great measure cease. It is certainly within our recollection, when cases similar to those which are now almost universally relieved by the forceps, were as certainly treated by the crotchet, the child a certain victim, and the mother a probable one.”

Denman† says, “ when there are signs of imminent danger, however averse we may be to the use of instruments, we may be induced to try the forceps, though the case might not be altogether such as we might chose for their application, merely to take a chance of saving the life of a child, which must otherwise be inevitably lost.”

Millot§ was so convinced of the value of the forceps, and its fitness for the purpose for which it was constructed, “ that he calls upon the French government, in the name of the thousands of individuals who owe their lives to it, to place a bust of the author, in the school of medicine, with an inscription commensurate to the services he has rendered to humanity.”

* Vol. I. p. 296.

† p. 150.

‡ Vol. II. p. 135.

Maygrier * states his conviction, "that in a few years " the forceps will be the only instrument employed by the " accoucheur."

Madame Lachapelle, † in her *Pratique des Accouchemens*, after some excellent remarks upon the use of the perforator, concludes by saying, "that it is only in cases " of absolute necessity that it should be made use of, and " that in order to create such extremity, the forceps and " turning must have been found impracticable."

Many other authorities might be quoted, but this body of testimony must be sufficient to convince any candid inquirer, that the voice of the profession is decidedly opposed to the precipitate employment of the deadly instruments. It is therefore the duty of every practitioner, to investigate the nature of the cases in which the forceps may be applied, the time at which they may be best used, and the manner of employing them. I may here observe with Denman, "we are to remember that the forceps are " not to be applied, because we have the power of using " them, but because the necessity of the case is such as " to require their use."

Much has been written, with respect to the period at which such a necessity may be said to have arisen, but it is with this, as with most other actions of the animal economy, no precise time can be assigned; the urgency of a case cannot be estimated by the number of hours that labour may have lasted, but by the state of the mother in each particular case.

Doctor Denman defines difficult labours to be, "those

* Vol. I. p. 385.

† Vol. I. p. 84.

“ in which, although the head of the child presents, the delivery is not terminated in twenty-four hours from the commencement of real labour.” Every practitioner must be aware that such cases are by no means unfrequent, and that the efforts of nature in very many of them, and even in others of much longer duration, are sufficient eventually to expel the child. But when labour is thus protracted, circumstances may, and do often render it desirable, to expedite delivery. These, as I have said, relate not to time, but to the condition of the mother; some women being able to bear a much greater length of suffering than others. In the more simple cases, those that are unconnected with convulsions, hemorrhage, &c. the state of exhaustion of the mother, and cessation of labour pains, are the best indications for the interference of art.

Doctor Osborne says, “that in the state indicating the use of forceps, all the powers of life are exhausted, all capacity for further exertions is at an end, and the mind as much depressed as the body, they would both sink together under the influence of such continued and unavailing struggles.”

Now, to wait for such a period as this, is but to delay the operation, until the chances of success are almost lost; in fact there will be little prospect of any thing, but the removal of a dead child, from a dying mother; and it is such a practice, that has at times, brought this valuable instrument into disrepute and disuse: the want of success has been charged upon the operation, where it ought to be laid at the door of the operator. It is with us in this, as

it is with the surgeon in strangulated hernia, the operation should be performed as soon as the necessity for it is found to exist, every moment's delay diminishing the prospect of a successful termination; and it is to this principle that so many happy results from the use of the scalpel in that disease, in modern times, are to be attributed. Let not the accoucheur, therefore, wait until the powers of life are exhausted; his duty is to prevent such an occurrence, and this is to be done by the timely application of the forceps. Delivery with this instrument may be attempted in whatever position the head may be, if it is sufficiently low in the pelvis, while at the same time the *os uteri* is dilated, or the soft parts are relaxed. As soon as matters are in this state, the practitioner should proceed to delivery without waiting until the mother's strength is so exhausted as to raise alarms for her safety, and oblige him to fly to any means of extraction, without regard to the life of the child. Delay under such circumstances, and running the patient to the last extremity, in giving her and nature (as it is called) every chance, is, in my opinion, a main cause of the too frequent use of the perforator. *Neque timerè, neque timidè*, is the best motto by which the accoucheur can be guided in such circumstances.

By this timely interference the evils attending upon difficult labours, such as contusions, inflammations, and sloughing of the soft parts will be obviated, as it is generally found that these effects are proportionate to the length of time the parts have been subject to pressure.

With respect to the ill effects said to follow the use of

the forceps, I am bold to say, that though I have read and heard of such, I never witnessed any, when the instrument was used in time, or with proper discrimination and dexterity, and where the patient was not already too much exhausted; and from the success that has attended the use of forceps in my hands, I might almost assert that no unpleasant consequences can occur, provided the proper time be selected.

In looking over my case book, I find that during forty-two years, in which I have been actively employed in the practice of midwifery, the first five years of which were spent in the Dublin Lying-in Hospital, as pupil and assistant to Dr. Clarke, it has fallen to my lot, in my private practice, to have delivered one hundred and eleven women with forceps or lever; and having kept a faithful registry of my practice, I am enabled to speak with certainty, of each case, however remote as to time. I have to lament the death of my early, and highly esteemed professional companions and friends, Doctors Pentland and Tuke, and Mr. Creighton, who co-operated with me in several of them, and could bear testimony to the facts. I can however still appeal to several highly respectable practitioners in this city, who have done me the favour to consult me in different cases. In this extensive number, which, it will be admitted, is sufficient to put the merits of the practice to the test, it might be expected that some proportion of fatality, or accident should be found, but the valuable part of the statement, and what I wish to impress upon the minds of the profession is, that in no instance of the hundred and eleven cases mentioned above, did

any unpleasant result follow; none of the mothers died—none of them had their perinæum lacerated, nor any of those evils, which are set forth as the effects of the forceps; and still more, all the children that we had any reason to think were alive at the commencement, were born living, and none of the whole number had any injury or mark whatever inflicted by the instrument. From this extensive experience of the value of the forceps, I think I am justified in saying, that the opinions of the authors already quoted, are fully supported by the facts.

With respect to the operation, no great dexterity is required for its performance; a little management in the introduction of the blades, and patience in the extraction, is all that is required to bring it to a happy termination. The instrument I have always used, is that which is called male and female, from the transverse opening in the root of one blade, through which the other is passed—other practitioners prefer the curved forceps—it is quite immaterial which is chosen, provided they are used in proper time, and with good judgment.

Having ascertained by the rules already laid down, that immediate delivery is desirable, my custom is to empty the bladder and rectum, by the catheter or an enema if required. The patient being placed on her side, as near to the edge of the bed as possible, I proceed by introducing the female blade of the forceps, slowly and carefully over the upper side of the head of the child, until it reaches beyond the ear; this being accomplished, the chief difficulty is overcome, for the male blade being passed through the slit in the female blade, readily applies itself

in the proper position, by gently urging it forward under the inferior side of the head. It is of importance to attend to this order of proceeding, for if the female blade were introduced to the under side, it would be difficult, from the relative position of the patient, and the bed, to pass the male blade through it. The application of the instrument usually brings on slight action of the uterus, although it may have ceased for several hours. This I always wait for, and taking advantage of the natural effort, the perineum being supported by the nurse-tender, or my own left hand, I have seldom found any difficulty in extracting the child alive and uninjured, provided it were so previous to the commencement of the operation. The operation as performed in this manner gives so little pain, and delivery is in general so easily accomplished by it, that I have been several times requested by patients, with whom I had previously employed forceps, to use them in subsequent labours.

I have been called upon in several protracted cases of labour, some of them of first children, and in women advanced in life, to give sanction to delivery with the perforator and crotchet, and have found the instruments ready prepared for the operation, when I have recommended a trial with the forceps, and fully succeeded in bringing into the world living children, with very little, if any trouble to myself, no risk to the mother, and no injury to the child; this is well known by several most respectable practitioners in Dublin, who have been witnesses to the result.

When I contrast the feelings created at such a moment,

in the operator, the patient, and her friends, with those experienced, when the body of a child (of whose previous life the mother had no doubt,) is dragged mutilated into light, I confess that I cannot understand why the latter should ever be adopted, without the fullest certainty of the impracticability of the former. What adds to the horror of the perforator is, that it is no uncommon circumstance to have a child born alive and cry, whose head had been opened, and the brains partially destroyed. Doctor Burns* says, "by the rash and unwarrantable use of the crotchet, " living children have been drawn through the pelvis with " the scull opened, and have survived, in this shocking " state, for a day or two." Davanter, Chamberlain, and others, give instances of women delivered by the crotchet of dead children, as " they supposed, when to their great " surprise, the miserable infants filled their ears with " cries." Mr. Dease † states, " that he has seen instances " where the child has been miserably dragged alive into " the world, with a great part of the brain evacuated."

Similar instances have (I understand) occurred in this city, in one of which humanity prompted the accoucheur to plunge the child into a vessel of water, to put an end to its existence and cries.

I can never forget a scene of horror to which I was a witness in the year 1800. I was called upon to see a very young lady, in labour of her first child, who was under the care of one of the oldest and most eminent practitioners in this city, (since dead;) her labour was most violent, which she bore with great impatience and noise.

* p. 60.

† p. 40.

The head had been down on the perinæum (he said) several hours; I proposed to give more time, and an opiate, not doubting the powers of nature, or to try the forceps, which he declined, on account of its being her first child, and the apprehension he entertained of her being exhausted; and finally, he opened the head. The operation, as it always does, excited extraordinary uterine action, and before it was well concluded, or the brain evacuated, so as to lessen the bulk of the head, the child was propelled into the world alive and crying.

The old gentleman whose patient she was, was a person of very fine feelings, and the reader may imagine his sufferings on viewing the effect of a rash and ill-judged operation; he declared no earthly consideration should ever induce him again to witness the application of the perforator.

The following cases occurred to me lately, and as they fully exemplify my principle, I will give a brief account of them.

Mrs. M., 30 years of age, and remarkably corpulent, took labour of her first child early on Friday, the 28th of November, 1828, and at six p. m. the membranes ruptured; from this I will date the commencement of real labour. The pains continued to increase in severity and frequency, until 2 o'clock, p.m. on Monday following, a period of sixty-eight hours from the evacuation of the waters. During the whole of this interval she had not slept, and had taken no sustenance, except a small quantity of whey, consequently her strength was a good deal exhausted. The bowels had been freed, and during the

last twenty-four hours, the bladder was twice evacuated by the catheter. The head of the child was now sufficiently low in the pelvis, the os uteri was dilated, and the external parts were relaxed. In this state of things I proposed to deliver her by the forceps, which at first produced alarm in her mother and friends, and even in the nurse-tender, and I was earnestly asked, if I could not do something to save both, and not kill the child, for they understood, that when instruments were used in delivery, the child was always destroyed. I assured them that my object was to save both, and showed the instrument I meant to employ, explaining, at the same time, the nature of the operation. With this they were perfectly satisfied. I then applied the forceps, as I have already described, and waited patiently for a pain; on its occurrence I gave assistance, and during its continuance a living boy was born, without scratch or bruise, or injury to the perinæum.

This was a case in which there was no likelihood of labour being over for several hours, if left entirely to nature, and in which there was considerable danger that both mother and child would suffer materially before its completion; all this was prevented by a few moments well-timed exertion, which produced undescribable satisfaction in all persons concerned. I called to the recollection of my patient, that the wife of a right honorable friend of hers had been delivered by me some years before of her first child, under similar circumstances, and with the same result, at an age very little under forty years.

CASE II.

December 21st, 1828.—I was called to a patient who had been upwards of twenty-four hours in very severe labour of her first child; I found the head pretty low in the pelvis, though not on the perinæum. A very respectable midwife, who had been in attendance from the commencement, stated, that it had been in the same situation or position for twenty hours, and within that period a tumour had formed upon it, which was now so great, that the midwife, who had frequently witnessed the operation with the perforator, but had never seen the forceps used, except once by myself, several years before, said, “Sir, “ I fear this case will not admit of the use of the forceps, “ as the head is so much swelled.” I replied that although I could not positively promise success, yet I would give the child the only chance it had for life, and that if I failed in the attempt, it would then be necessary to resort to other means, as the patient was greatly exhausted, and the soft parts had been long subject to very strong pressure. With some difficulty I accomplished the introduction of the forceps, and desiring the attendant to protect the perinæum, I waited for a pain; three of those efforts of nature were made, (during which I gave the necessary assistance,) without extraction, but during the fourth, and within fifteen minutes from the commencement of the operation, a large living boy was safely born. I requested the midwife to examine the perinæum carefully, for her

own satisfaction and that of her friends, which she declared to be perfectly unhurt. This is a case in which the head would certainly have been opened by those who are prejudiced against the forceps; as the apparent disproportion between it and the pelvis, would have led them to suppose there was sufficient reason to authorise the use of the perforator.

The occurrence of convulsions, in difficult labour, has been considered as affording a sufficient ground for the immediate delivery, by opening the head; yet even in this case many lives may be saved by a judicious use of the forceps. I would by no means advise that much time should be spent in endeavouring to save a child, while the mother is in imminent danger; but I would strongly insist upon the necessity of trying means to prevent it, particularly as the operation by the forceps does not occupy so much time, as that by the perforator; and should the attempt fail, it is easy to have recourse to the latter. That such a principle admits of practical application, the following case fully testifies.

In the year 1814, a gentleman, residing eighteen miles from Dublin, called on me, to request I would accompany him with all expedition to see his wife, who had been suddenly seized with labour of her first child, attended with convulsions before he left home. We reached his house in about five hours from the time he left it. I found the lady lying on the parlour-floor, labouring under severe convulsions, and quite insensible, in which state she had remained during her husband's absence. On examination, the head was found to be low in the pelvis,

and the os uteri dilated. Without removing her I introduced the forceps, and a few minutes succeeded in extracting a female child alive. The mother was now removed to bed; the convulsions ceased in a short time; her senses were restored, and the recovery was as speedy as if no untoward circumstance had occurred. I may observe that the gentleman had no more children, and the child then born is now alive, and heiress to his large estates; a consolation of which he must have been deprived, had I rashly employed a destructive instrument. If I had experienced much difficulty in this case, I would have thought myself justifiable, nay, called upon, to sacrifice the child, but certainly not until I knew it was unavoidable; and I state it to show that in the worst of cases, the milder means may be resorted to with considerable prospect of success.

With respect to the use of the perforator, Dr. Denman justly observes,—“The reason for, and justification of “opening the head, must be decided from the state of the “mother, and that state must be such as to prove her “inability to expel the child, and the impossibility of “extracting it by those means, which have been contrived “for the purpose of delivering women, giving at the same “time a chance for preserving the lives of children.”

In fact, the legitimate cause for using this instrument is distortion of the pelvis. Dr. Osborne considers “that “a fœtus at full maturity cannot pass alive, if the dimensions of the pelvis from pubis to sacrum be only $2\frac{3}{4}$ “inches.” Dr. Clarke of Dublin says, “that $3\frac{1}{2}$ inches “is the least diameter through which he has known a full “grown fœtus to pass entire.” These measurements are

taken with reference to the head of the child, which being of a variable size, in different cases, the proportion it bears to the passage must be also variable; hence arises the danger from confining ourselves to actual, instead of relative measurement; for a pelvis that would admit the passage of one head, might be unable to transmit another.

I do not mean to depreciate the value of actual measurement in enabling us to form an opinion, but I would warn the practitioner against judging from it alone, and hastily concluding that safe delivery is impossible; and also against concluding that every female with a distorted spine has a deformed pelvis. In all such cases we should ascertain, if possible, whether the distortion of the spine commenced in infancy, or about the time, or subsequent to puberty; if it commenced in infancy, it will be reasonable to suspect that the pelvis participates in the deformity, and is contracted in its dimensions; but if it did not come on, until the growth of the body was perfect, or nearly so, we may hope to find no deformity in the pelvis. Such distortion of the spine frequently takes place in delicate females after marriage, and even after having had some children; and then I never knew it to interfere with the pelvic bones. In cases of contracted pelvis, it behoves the practitioner, as Dr. Merriman observes, to be exceedingly cautious, not to suppose upon light or insufficient grounds, that the distortion is too great to allow the child to pass, and particularly when there is a question about employing the perforator. The fact is, there have been instances, where by the effort of nature alone, living children have passed through a pelvis, scarcely measuring three inches.

vide Burns, p. 259, and Dr. Hamilton. Therefore, our attention should be directed more to the effect produced upon the head by the action of the uterus, than to the actual dimensions of the pelvis. If we find, after several hours of hard labour, that no descent of the head into the pelvis has taken place, and that the patient's strength is beginning to fail, we may expect that it will be necessary to diminish the bulk, before expulsion is accomplished; but as long as the pains have any effect, however small, in forcing down the head, we are warranted to look for the birth of a living child. In a case of this description, the forceps or lever will often be of the greatest assistance.

It is truly surprising to witness the degree of compression that the head of a child will bear without detriment.

Smellie* relates the case of a young woman, only fifteen years old, whom he delivered of a living child by the forceps, and the child's head being large, had been squeezed to a great degree, so as to alter its form, but in a few days it completely regained its natural figure.

Dr. Denman† also gives an account of a child, born alive, with a depression of fully an inch in depth, on the left parietal bone, occasioned by the projection of the os sacrum; but the depressed part gradually rose, and in a few months regained its original level. I have myself often witnessed the birth of children whose heads had suffered very great compression, yet no unfavourable symptoms followed. We are not to be deterred, therefore, from attempting delivery by the forceps, because the dis-

* Vol. II. p. 300.

† p. 122.

proportion may appear too great, but we must be convinced that it is really so, by ascertaining the impossibility of extracting the child entire. If we have patiently and fairly tried the forceps or lever, and failed in the attempt, we will then have recourse to the perforator with greater assurance of its necessity, and perfect freedom of conscience. In this case, I would express myself in the emphatic language of Dr. Burns,—“I beg that as the “practitioner values the life of a human being, and his “own peace of mind, he will not desist, and have recourse “to the crotchet in cases at all doubtful, until it has been “well ascertained that neither the lever nor forceps could “be used.” By the adoption of this principle, many labours will be brought to a happy termination, that appear to threaten the death of the child.

In my own practice it has been followed with the greatest success, and I am happy to state, that since the year 1804, I have used the perforator and crotchet but three times, while the majority of the hundred and eleven forceps cases occurred in the same period.

In conclusion I will observe, that nothing short of the most imperative necessity can warrant the use of the destructive instruments, and no case can be considered as demanding them, until every means by which both mother and child might be saved have been put into requisition, and fairly tried. Let us ask with Dewees, what is to be feared from a proper application of the forceps? Is their mode of action such as to do injury to either mother or child, when well directed? Certainly not. Then there is nothing to be apprehended from their structure, appli-

cation, and mode of action, since they neither cut nor contuse mother or child when well directed. They neither create unnecessary pain, nor inordinately augment that which may be present; but are truly calculated, in the language of Dr. Denman, to supply the insufficiency or want of labour pains. If this be so, and it is admitted by Dr. Denman himself, why should they be condemned, because in common with every thing we possess, they may be abused. I repeat it, the object of the practitioner should be to preserve both mother and offspring; if, unfortunately, he should ultimately fail in this endeavour, he must then decide between the two, and sacrifice the child. To be driven to such an extremity, is one of the most painful situations in the practice of midwifery; it forces a man to perform an operation, differing in principle from every one in use among medical men. All others are done with a view to the ultimate benefit of the sufferer; but this alone tends to his immediate destruction. Such a consideration, together with the heavy responsibility a man incurs, by becoming the voluntary destroyer of a human being, should make us pause ere we lightly reject means, by which results so lamentable and awful might be avoided.

JOHN BEATTY.

Molesworth-street,
1st Oct. 1829.

AUSCULTATION,
THE ONLY UNEQUIVOCAL
EVIDENCE OF PREGNANCY,
WITH CASES BY
JOHN C. FERGUSON, A.M. M.B.

FELLOW OF THE KING AND QUEEN'S COLLEGE OF PHYSICIANS IN IRELAND, &c. &c.

Read, 2d November, 1829.

“ Notandum est magua hic prudentia opus esse Medico, ne facilè graviditatem vel affirmet
“ vel neget; peritissimi enim decepti fuerunt toties; nunquam majis periclitatur fama Medici,
“ quam ubi agitur de gravitate determehandâ.”—VAN SWIETEN.

AMIDST the varied and important applications of mediate auscultation, which have been so zealously and successfully prosecuted by many practitioners in this country, there still remains one which appears to me not yet to have received a due degree of attention, nor to have been sufficiently submitted to the test of experience, the only proof we should admit of its real value; I allude to its employment in the detection of pregnancy, and the incontrovertible evidence which it affords of a living fœtus in utero.

I have to regret that this subject has not yet employed the pen of others of my Medical brethren, who, having devoted themselves more particularly to the study of midwifery, must, of necessity, have a much more extended field for observation. But as a few cases have occurred to me of late, which in no small degree interested myself, where pregnancy was most artfully and successfully attempted to be concealed, and where the stethoscope alone could give such unequivocal signs, as might enable a medical man to pronounce, without the possibility of error, on the presence of a *fœtus*, I shall offer no apology for laying them before the Association. And I do so, in the hope that others, whose opportunities are more extensive, may not only avail themselves of them, but favor their brethren with the result of their experience; and, moreover, with the conviction that thus many frightful evils may be averted, that many an infant may be rescued from the hand of the infanticide, and many an unfortunate mother from the ignominious punishment prescribed by the outraged laws of Nature and her country.

Although, no doubt, it is in a Medico-legal point of view that this subject is most interesting, yet how frequent are the occasions in the routine practice of every man, where it is a great desideratum (to the practitioner who values not only his good name but his conscience,) to be able to pronounce with certainty, not whether there be a *fœtus* *iu* *utero*, but whether it be living; cases, I believe, of very frequent occurrence to Accoucheurs, and too often presenting difficulties not easily surmounted. So situated, the medical man may confidently turn to his stethoscope.

It will afford him the evidence of his senses in proof of the presence of a living fœtus, by physical means, simple in their nature—unerring in their indications—and possessing the great advantage of being quite inoffensive to female delicacy.

All the signs of pregnancy that have been observed and enumerated by systematic authors, and are looked for by practical Accoucheurs in the formation of a diagnosis, are confessedly fallible, equivocal, and deceptive, capable of being simulated not only by a state of the uterus, very different from pregnancy, but by many abdominal diseases.

I shall not here enter particularly into the recorded opinions of authors on this subject, but content myself with referring in a very general manner to two of the latest, and perhaps, most esteemed authorities. Dr. Gooch, in his very valuable book published within the present year, gives an admirable practical chapter on the symptoms of pregnancy, in which we find the following paragraph.—“It is clear that if these symptoms always accompanied pregnancy, we should always know when it existed, and if they never accompanied any other state, we could never mistake any other state for pregnancy. But unfortunately they possess neither of these requisites for infallibility; they may be absent in patients who are pregnant, and present in those who are not so; and thus give rise to frequent errors.” And again,—“Although they are sufficient guides in most cases, and under ordinary circumstances, yet they are often insufficient.” The object of the present paper is, to direct the serious attention of the profession to at least one of

these “requisites for infallibility,” and I would here beg leave to express my disappointment at not finding it even alluded to by Dr. Gooch, in his work published more than four years after its discovery. For though I may not be prepared to state that an audible foetal heart or placenary bruit, “always accompanies pregnancy,” one of his “requisites for infallibility,” yet I believe few will refuse assent to the assertion, that an audible foetal heart or placenary bruit “never accompanies any other state,” which constitutes the other “requisite.” The signs of pregnancy afforded by mediate auscultation, I admit the mere possibility, “may be absent,” (that is, not detected,) “in patients who are pregnant,” but of course deny altogether that they can be “present in those who are not so.” And this I conceive to be no trifling approach towards that great desideratum “infallibility.”

In the last edition of Beck’s Medical Jurisprudence, by Dr. Darwall, published so late as June of the present year, we find the following:—“There is no one invariable sign of pregnancy, and it is probably well that there is not.”

Why the latter, I confess myself quite at a loss to comprehend. Nor does he at all introduce mediate auscultation as a mean of detecting pregnancy, but merely alludes to it in a note, where he says,—“The discovery does not “as yet appear sufficiently matured.” I am free to admit that the subject still requires much maturation; that much still is due to society, and our profession, by those who have extensive opportunities of observation; but as far as the testimony of an individual merits attention, I would beg leave to state, that for the last three years I

have been in the habit of examining by the stethoscope every pregnant woman who presented herself, under any circumstances, at either of the public Institutions to which I am attached. I have thus had opportunities of testing the value of mediate auscultation in such cases above one hundred times, and in every instance, with but one exception, I could detect either pulsation of the foetal heart or placenary noise, generally both, after the patient had passed the fifth month of gestation, and in many, indeed the majority, before that period. In the individual case which I have excepted, I could detect neither the one nor the other; however, I had no opportunity of making a second examination, which should never be omitted in doubtful cases, nor of learning whether the child might have been dead or not; for the woman, contrary to her promise, never returned to me. I should also remark, that in not more than eight or ten cases did I find it necessary to remove the usual clothes of the patient from beneath the instrument, leaving only the chemise between it and the abdominal parietes; nor to oblige them to assume the horizontal position, which is decidedly more favorable to an accurate examination than the erect or sitting. My usual practice has been to examine them seated on a chair, and without the removal of any part of their dress. I am well aware that others, who may have made frequent trials, have not been so fortunate in detecting these phenomena: this is not for me to attempt to explain nor contend about; my sole object is to state facts which I have myself observed, and only claim, what I hope I shall obtain, credit at least for veracity.

The two signs of pregnancy which the stethoscope affords, were first observed by a talented young Frenchman, Monsieur Kergaradec. He pointed them out to the immortal author of *Mediate Auscultation*; and often have I seen Laennec practically confirm their truth, and heard him acknowledge their value. They consist in what has been termed the 'bruit placentaire,' and the pulsations of the foetal heart. I believe they are not in general observed, for obvious reasons, before the fifth month; but after that period an accurate observer will seldom fail to detect either, and in most cases, both. The placental noise, which is nothing more, as I conceive, than 'bruit de soufflet' in the arteries connecting the placenta with the uterus, should be sought for in either Iliac region, where, at least according to my experience, it will be most generally found. Yet have I detected it in almost every point of the abdomen, nor does it ever vary from the place where first heard.

The only error that I am aware of, into which we are liable to fall in making this examination, is, where the pulsations of the Iliac arteries are accompanied by a 'bruit de soufflet.' This of course is well calculated to deceive; but when the artery is the source of the bruit, we shall hear it, I am inclined to think, equally on both sides, at least I never met a case where this did not hold. Besides it will not be heard, save in the groin, whereas the noise of the placenta is heard over a space of some extent, perhaps three or four inches square.

The foetal heart I have heard in almost every region of the abdomen. Although it and the placenta are some-

times heard in the same side, and I have even found them in the same spot, yet have I observed that they were to be met with in the majority of cases, at opposite sides, generally in the Iliac region; so that this is the situation which I always examine first, and have rarely occasion to shift the instrument to any extent before either one sign or the other is discovered. The foetal heart however, unlike the placenta, is not always heard in the same place in the same individual, that is, it may be found to-day in one point, and to-morrow in another; though I have never observed it to vary far from the point where first heard. Its double beat is well marked, and the frequency of its pulsations are, I believe, always much greater, often double that of the mother's heart.*

It is very remarkable, how small a foetal heart may be distinctly heard by the stethoscope. In the foetal heart which I now present to the Association, whose size certainly does not exceed that of a hazel nut, the two sounds were detected under the following circumstances.

A goat had been procured for a very different purpose by Doctors Hunt, Corrigan and myself, and bound on its back on the operating table. I casually applied the stethoscope to its abdomen, without the slightest previous knowledge of its pregnancy, and was surprised to detect almost immediately the distinct double pulsations of a

* Since writing these remarks, a case occurred to me, in which the foetal heart was distinctly heard to beat only 28, the mother's 100. I also observed a peculiar irregularity in it's rhythm. Dr. Corrigan, who was with me when I examined this patient, satisfactorily verified this observation. I am not aware that any similar fact has been as yet recorded.

fœtal heart. My two friends, to whose accuracy of observation I have been often indebted, satisfied themselves perfectly of the fact, and on examining the uterus about an hour afterwards, we extracted a fœtus, of which the minute preparation which I now offer was the heart. On enquiring from the person who sold us the goat, on whose accuracy we could depend, we learned that it was exactly seven weeks from copulation.

It is not my present intention to enter on the many and interesting points of a physiological and practical nature, which are so intimately connected with this subject, and naturally suggested to the mind, by its consideration ; I shall content myself with this mere enumeration of the physical signs of pregnancy, and shall proceed forthwith to adduce, as a practical illustration of their value, as brief an account as possible of the cases to which I have alluded.

CASE I.

In November, 1827, a young woman, aged 22, applied at the Dublin General Dispensary for relief ; she gave such an account of herself as induced me to think she laboured under an aggravated form of dyspepsia. She told me her menses were regular, and that her abdomen, which I observed to be enlarged, was so only occasionally ; indeed, such was the excellent arrangement of dyspeptic symptoms which she stated herself to labour under, that she completely blindfolded me. However, on her third visit to the Dispensary, some incoherence in the account of her-

self, and, as will be readily imagined, no beneficial effects following the exhibition of the medicines ordered for her, excited my suspicion ; when, as was my habit with pregnant women, I employed the stethoscope. The riddle was soon read. I almost immediately detected the heart of a fœtus, and also the placenta, nor, which is a matter of some moment in such cases, had the patient the slightest suspicion of the object of such an investigation. She received the announcement of her being pregnant with extreme indignation ; indeed, this young lady's histrionic talent was of the first order, and such was her well-feigned agony at the very idea of her virgin innocence being even suspected, that had I not the positive evidence of my senses to confirm me in the opinion I had expressed, I should have felt extremely uncomfortable in the situation in which I found myself. I took some trouble to convince her of the impossibility of my being mistaken. Having obtained from her the address of her friends, despite her most urgent entreaties to defer the disclosure for some time, as by her own acknowledgment she was only in her fifth month, I communicated the fact to them, with all the palliation I could adduce, and with a good deal of difficulty quieted the storm of angry feelings, which such an announcement was well calculated to elicit. They forgave however, and promised to receive her.*

* I have been asked, 'But how did the case terminate?' Although I am enabled to reply, by an accouchment, yet I consider the statement of this fact unnecessary, where there did not exist a shadow of doubt as to the presence of the pathognomonic signs : for I conceive that as accurate and positive ideas of existences may be conveyed by

CASE II.

The next case occurred to me in March, 1828. A married woman came to Cole's-lane Dispensary, with her unmarried sister, aged eighteen, whom she stated to have been ailing for some time. By her own account, for the past twelve months her general health had been declining, but only during the last two months had she observed the swelling of her belly, and this her sister assured me, at times almost entirely disappeared. The married sister evidently from what she told me of the girl's health, and indeed afterwards acknowledged, never once suspected her of any impropriety. On finding the enlargement of the abdomen over the pubes to be of a firm, unyielding nature, I had immediate recourse to my stethoscope, without entering at all into the particulars of her case, or rather her account of herself, or dropping the least hint of my object: and candour obliges me to confess the extraordinary satisfaction I enjoyed in hearing the foetal heart beat 136 in the minute, on the very first application of my ear to the instrument. I counted the heart's pulsations several times, and compared it with the mother's pulse, which was only 80. It will be easily imagined that I needed no further information as to general symptoms, either from the girl herself or her sister; I therefore requested the latter to retire for a few moments, and very unceremoni-

the sense of hearing as that of sight; that the blind man who hears the foetal heart in utero, is as morally certain of its existence, as he who sees it after birth.

ously told the patient my opinion of her. She denied stoutly, and wept bitterly. I again examined her, and if any further proof was wanting, satisfied myself of the positive existence of a foetus, not only by its heart's action, but also by the placental noise, which was heard particularly loud on the opposite side. In this instance again I mediated between this unfortunate and her sister, the only friend she had on earth. I hope it may never again fall to my lot to behold such a scene of mental anguish as I then witnessed. I shall not attempt a description of it. They left me, the elder sister promising me faithfully she would not desert her, and would take care that she attempted no violence on herself or her offspring. I had frequent occasion to prescribe for this girl during the remainder of her pregnancy; she was safely delivered about three months after I first saw her. I may mention a circumstance with respect to this poor creature, which, if we can believe her, is not entirely devoid of interest. She has frequently assured me in the most solemn manner that she never had connexion but once, and then she had been reduced to a state of inebriety. This statement I merely give as I received it, and I must confess, am rather inclined, from circumstances, to give credence to it.

CASE III.

In December, 1828, business brought me sixty miles from Dublin, where I met in consultation an eminent and intelligent practitioner. He related to me some cases of interest then under his care; but one in particular, he

expressed a strong wish that I should see with him. His patient was the daughter of a respectable shop-keeper; her apparent disease Ascites; but from what organic cause was the point most difficult to be ascertained. The girl's history of herself, stating, that her ailments had been of twelve months standing, that her abdomen had been occasionally enlarged during all that time, though latterly more permanently so, that the remedies which had been prescribed for her had produced the most beneficial effects, was all confirmed by the testimony of an anxious and intelligent mother. To enter more fully into the particulars of this well got up, and admirably acted drama, would be more tiresome than interesting; suffice it to say, that the agitated and confused manner of this young woman, when I was first introduced to her, struck me forcibly. This, added to the peculiar shape and solidity of the belly, immediately roused a suspicion, which at the moment, I confess, I thought it unjust to entertain. However, I knew well the advantages I possessed in mediate auscultation, and resolved to avail myself of them. Unfortunately I had not a stethoscope with me, nor could one be conveniently procured; thus circumstanced, I bethought myself of Laennec's original idea, the roll of paper, which I used to some effect. With considerable difficulty and embarrassment I succeeded in discovering the pulsations of the foetal heart. From the nature of the instrument, they were of course feeble and indistinct, yet sufficiently evident to leave not a shadow of doubt on my mind as to the organic cause of the Ascites.

I regretted not having my stethoscope, more particu-

larly, as it prevented me from pointing out to my friend those peculiar phenomena, which I have no doubt, with the instrument he could have detected, and which must, of necessity, have been followed by conviction in his mind. The announcement of my diagnosis surprised him ; he was, and under all the circumstances, I admit, with apparent reason, rather incredulous. As a proof of his still leaning to his own opinion, and doubting mine, in letters which passed between us on other matters, he often expressed a hope that his patient was improving ; but kindly added, that he was not inclined to think the less of the value of auscultation, on account of the peculiarity of the circumstances under which I had formed my diagnosis. I felt satisfied however that the day was not far distant when he would change his mind, and I extract the following from a letter which I received in reply to one I lately addressed to him, making some enquiries into the particulars of this case.

“ An accouchment has fully confirmed your diagnosis, “ which I confess has contributed to raise in my esteem “ not merely the discriminating qualities of the stetho- “ cope, but also your tact in using it, which was on that “ occasion brought to a very nice trial, as, in want of an “ instrument, you were obliged to make use of a few “ sheets of coarse wrapping paper as a substitute ; so that “ even had the positive assertion of pregnancy which you “ then made to me, turned out in the event to be erro- “ neous, I should have imagined that the rudeness of the “ instrument employed in your examination, would have “ furnished you with more than a sufficient apology for

“ the error. As it turned out however, this imperfection
“ of the instrument has only contributed to encrease my
“ desire to become acquainted with its use and appli-
“ cation.”

Thus this eminent general practitioner, of long and extensive experience as an Accoucheur, was completely led astray by the well feigned symptoms of this girl, and I believe never for a moment even suspected her pregnancy; nor do I hesitate to express my conviction, that no man who saw her, heard her history and knew her respectability, would have been justified, relying solely on the usual symptoms, in hazarding such an opinion.

I may be told that such mistakes are not common; that they not only do not, but could not occur to men of acuteness and matured judgment. Both these assertions seem to me to be without foundation, and to merit a distinct contradiction; the former, because so many cases of this nature having in so very short a space of time occurred to myself, whose opportunities of meeting them have been so limited, I must naturally infer that to others they are by no means of rare occurrence; the latter, because I have myself seen in this city, not to leave home, two cases which were believed to be Ascites, treated as such by Clinical professors, up to the very day of their accouchement. Nor did either of these two gentlemen suspect the truth, or if they did, could not, of course, have possessed the means of putting the matter beyond doubt; yet the acuteness and judgment of both, few who know them will question. Besides, how many similar cases have we not all heard of, and on the most undoubted authority?

Have we not even cases recorded, where the want of a sufficient guide, under similar circumstances, has led men of eminence so far astray, that the very foetus in the womb has been, I believe in more instances than one, perforated by the trocar? But let us look to a far more awful consequence of uncertainty in such cases, and yet one of infinitely more frequent occurrence. Do we not daily read accounts of unfortunate infants being either exposed or inhumanly murdered? And is it not an acknowledged fact, that those which become the subject of public investigation, are but a small proportion of the number of infanticides which really take place? Is it not also undeniably, that it is by females such as these I have described, that attempts are made on the lives of their children, either in utero or after birth? And if it be so, what a check must be given to this murderous, but too common system, by medical men possessing the means of pronouncing positively on a case of pregnancy; and thus by being able to apprise friends of the real fact, do away with all further motives for secrecy on the part of the patient; for to the hope of avoiding detection is to be attributed, I believe, all the melancholy sequelæ of concealed pregnancy.

CASE IV.

A case of a different nature from these I have described, but possessing a considerable degree of interest, and I conceive strikingly demonstrative of the value of the means of diagnosis which I advocate, occurred to me in

April, 1829. Mrs. ——, aged 30, a comely, well formed woman, married three years; has had no children; enjoyed excellent health, with the exception of temporary costiveness, until about five months since, at which time her menses disappeared; she often suffered from headaches, want of appetite, and general debility. These symptoms, we might naturally suppose, would have lead any practitioner to suspect pregnancy, particularly in a married woman: yet she had been treated, as she reports, by several medical men, for the removal of these symptoms; nor would it appear, that it ever occurred to any of them, nor to herself, that she might be pregnant; indeed, when mentioned by me, she ridiculed the idea, and, why I know not, positively protested against its possibility. The enlargement of the abdomen was but moderate, and even this she assured me was by no means permanent. On examining the left Iliac region, I thought I discovered the pulsations of a foetal heart, but unwilling to give a decided opinion on one examination, when there existed any doubt, and in direct opposition to her own conviction, I merely expressed my suspicions, and begged of her to return in a day or two. This she did, and on the second examination the foetal heart beat 130 distinctly; the mother's, 90. The placental noise was also evident. Then all doubt was of course put an end to. This woman assured me that she lived on the best terms with an excellent husband, and that the want of children was the only mar to their perfect happiness. She left me weeping for joy, though still afraid to trust the truth of my diagnosis. Her accouchment in July proved its accuracy.

Thus, then, I conceive it to be sufficiently established, that either a placenta or foetal heart being distinctly heard, constitutes infallible evidence of pregnancy; evidence on which a medical man may, if required, conscientiously and positively *swear* to the fact; which I believe all admit, and our legal records show, could not be done under ordinary circumstances. But the more difficult question, 'Are we, in the absence of both signs, to infer the non-existence of pregnancy?' still requires more consideration and further investigation. At present I shall merely state my own opinion, formed, I admit, on a limited observation of facts; it is this, that where the patient has passed the fifth month, and in the great majority of instances before this period, on an examination of the abdomen carefully conducted by *a person well practised in Stethoscopy*, and, if necessary, repeated twice or thrice at intervals of a day or two, a foetal heart or placental bruit, or both, will, in every instance, be detected. I am well aware that many will conscientiously dissent from this opinion: but I would beg leave respectfully to remind those who do, of what I am satisfied they themselves must have experienced, that to detect these signs with facility, requires long practice, considerable tact, and a most acute stethoscopic ear, *requisites, perhaps, not yet possessed by all who employ, and some, who too often without good cause, condemn the instrument.* However, let us suppose a case of doubtful or suspected pregnancy, and that a practitioner being called upon to give a diagnosis, can detect neither sign, I may be asked, 'How is he to act?' He is unquestionably in no greater difficulty, than before he sought for them, and he may

then have recourse to other means to satisfy himself, and guide him in forming his opinion ; he may refer to every general symptom of pregnancy ever mentioned by author or practitioner, and giving them all, both individually and collectively, their due value, shall his doubts, I would ask, be then changed to certainty ; shall he, relying on them alone, be prepared *to make oath* on the presence or absence of a *fœtus*? Assuredly not. But to reply to the question put to me, ‘How is he to act?’ I conceive that so situated, his diagnosis should be peculiarly cautious and circumspect ; and though symptoms and circumstances be strong enough to induce others to lean to the opinion of pregnancy, if he have a well founded confidence in his tact as an auscultator, in my mind he should in no instance hazard the adoption and expression of such an opinion ; but on the contrary, he should state honestly his doubts, repeat his examinations at intervals, and in every possible manner, and if unsuccessful in his search, considering the absence of these signs as strong evidence of the absence of a *fœtus*, lean to the side of mercy, and await the issue.

I would then, in conclusion, respectfully submit to the Profession, that an audible *fœtal heart* or *placental bruit*, may be considered as “*infallible*” evidence of a *fœtus* in *utero* ; and also, that the absence of these phenomena amounts, if not to positive, at least to presumptive proof of the contrary.

CASE V.

When I had the honor of reading the preceding paper before the Association, I regretted that peculiar circumstances obliged me to omit the particulars of a case, which had occurred to me but a short time previous. As however I am now at perfect liberty to make what use of it I please, I eagerly seize the present opportunity of giving it publicity, more especially as it differs in some material and interesting points from all the others which I have adduced, being a striking elucidation of what I would more particularly urge on the attention of the profession, namely, 'that the absence of these phenomena (the pulsation of the foetal heart and placental noise,) amounts, 'if not to positive, at least to presumptive proof of the 'absence of a living foetus.' I have to lament, in this case, that I was led into the commission of a palpable error, from having reposed an ill-founded confidence in the general symptoms and history of the patient as diagnostic signs, and, I confess it, from not having given its due attention to the absence of all stethoscopic signs of pregnancy.

In September, 1829, I was requested by a valued medical friend in the country, to visit with him a woman who was living as dry-nurse in a most respectable family. Her mistress stated that she observed the enlargement of her abdomen for about six months, and that it had increased gradually up to the day I saw her. From a

number of circumstances she strongly suspected her to be pregnant; a few of these it may be well to mention. She knew her to be taking medicines for some months past, and to have obtained these medicines and medical advice not from the family Physician, but from a source where neither she nor any of the family had ever been in the habit of applying. She never complained, until spoken to of her enlargement by her mistress, when she said she had observed the same herself, but made light of it, and was with difficulty, and not until after a considerable lapse of time, prevailed upon to apply for advice to my friend, the Medical attendant of the family. She also, without any apparent provocation, spoke of leaving her situation, (where she had lived long and happily,) in November, about which time her mistress computed her accouchement might be expected. She became insolent, and threatened her mistress with legal proceedings for loss of character. Her health did not appear to suffer, as might have been expected, were any other than pregnancy the cause of her enlargement. She did her work as usual, not having complained of inability to perform it, until about a month before I saw her. These, and many other trifling circumstances, combined to strengthen her mistress in the belief that she was pregnant, which opinion was confirmed, I believe, by the concurrent testimony of the medical man who first saw her. My friend, with exemplary caution and judgment, declined giving any positive diagnosis, and though an Accoucheur in high estimation and extensive practice, admitted the impossibility of doing so with a

safe conscience, though he had seen and examined the patient twice or thrice.

With a knowledge of all these particulars, this woman was presented to me; she was, perhaps, in her fortieth year, of a spare habit of body, and not very prepossessing appearance. She seemed unhappy and agitated when I first addressed her, and submitted to an examination of the abdomen with seeming distrust. Its enlargement and peculiar shape, was that of a woman in the eighth or ninth month of gestation. The entire abdomen sounded dull on percussion, except in the epigastrium. Between the right hypochondrium and the umbilicus, my friend pointed out to me what he considered fluctuation; and I am free to admit, that so it seemed to me. But this could not be detected in any other point of the abdomen, which appeared to be almost entirely occupied by a solid tumor; however, on handling the abdomen and pressing in different directions, I thought I distinctly felt the movements of a foetus, an evidence of pregnancy which has been generally considered the most unequivocal.

I set about a stethoscopic examination with some confidence, but after a most patient and accurate search under favorable circumstances, I was obliged to confess my disappointment at not being able to detect the least grounds even for a suspicion of the presence of either phenomenon, I so confidently sought for. Here then commenced a conflict in my mind between the strong mass of positive evidence, which was adduced to lead to the opinion of her pregnancy, and the absence of all stethoscopic signs,

negative evidence of the contrary. I shrink not from the avowal that so circumstanced I committed an error, from which for the future I hope ever to escape, and which perhaps may not be altogether useless to others. When urged for my opinion, I stated that though I could not be morally certain of the fact, from my inability to detect the signs in which I placed implicit reliance, yet I was strongly inclined to lean to the opinion of her being pregnant, and urged the necessity of her mistress still keeping her in her family, in order that she might be the better watched.

To my Medical friend I expressed my great disappointment at not being able to detect those signs which had so seldom before, in similar circumstances as I conceived, escaped me; but declared my conviction that the case was one of pregnancy, perhaps combined with Ascites, and this opinion afterwards, on more mature consideration, for I saw the woman only once, I expressed in letters to him.

However, his letter of November 3rd, from which I extract the following, shows how erroneous my diagnosis was, and gives, though perhaps not a final, at least a practical answer to the question proposed in a former part of this paper, as still needing further investigation; ‘are ‘we in the absence of both signs to infer the non-exist- ‘ence of pregnancy?’

“My reasons,” writes my friend, “for still thinking “her not pregnant are, that the swelling of the abdomen “is greater, the fluctuation more distinct, the body more “attenuated, and the mammae still as flacid as possible.

“ Dr. —— saw her with me, and he now agrees that she
“ ought to be tapped, and that immediately. Whatever
“ the result may be you shall hear.—Apropos: there was
“ a girl here with me a few days ago, whom I suspected,
“ and on examination heard the foetal heart distinctly. I
“ told her she was pregnant, but she denied.”

CASE VI.

A few days since I was requested by my friend Dr. McCready, to visit with him a young woman, aged 18, of rather respectable connexions, whom he suspected of being pregnant. I deem it needless to enter fully into the particulars of this case; the respectability of her friends, the careful manner in which she was brought up, and her own forbidding appearance, would have combined to lead to the formation of a diagnosis, widely different from the truth; indeed, she had been ordered medicines, and active medicines too, by more than one medical man, with a view to reduce the swelling of her abdomen. Without putting a single question to her, the first application of the stethoscope to the left Iliac region detected a foetal heart beating 120; the mother's 90. Further examination was unnecessary.

From the size of the abdomen Dr. McCready was of opinion, that she might be in the seventh month of gestation. To all who would say that a pregnancy so far advanced could be ascertained without the aid of mediate

auscultation, I would put the two following queries:— After reflecting on the many errors which have been committed through a dependance on the common signs of pregnancy, could you take upon yourself the awful responsibility of blasting with her friends and the public, the fair fame of any female? Or could you, if appealed to, confirm such an opinion by *a conscientious oath*? I am persuaded a negative reply must be given to both questions. Moreover, this very patient, a girl of peculiarly mild and quiet manners, as her friends report, has already so far forgotten her nature, as not only to endanger her own life, but attempt that of her unborn offspring. Had her pregnancy remained concealed from her friends 'till after the period of her accouchement, have we not every reason to apprehend, that to cloak her faults, crimes the most heinous and unnatural would have been perpetrated?

To endeavour to prevent the so frequent recurrence of such horrors, is the object of this paper. Should it have the happy effect of saving, however indirectly, a single human life, great indeed shall be my reward.

I shall make no further comments on these cases, but content myself, as I have heretofore done, with a mere statement of facts; and in conclusion, beg leave again to call the immediate attention of that branch of our Profession, whose more peculiar province it is, to this most interesting, and I conceive, important subject. And I do so with no small degree of confidence in the result. One thing alone would I deprecate: let not this appeal

which I would zealously, but respectfully urge upon my brethren, be received with the sneer of unmeaning contempt, or, that first-born of ignorance, ridicule. It is made in the cause of science—in the cause of humanity—and by one who has no object in view, save the advancement of truth, and the best interests of his profession.

JOHN C. FERGUSON.

Rutland-square,
November 12, 1829.

CASES OF
PUTREFACTIVE DISORGANIZATION
OF
THE LUNGS,
BY
ROBERT LAW, A.M. M.B.

FELLOW OF THE KING AND QUEEN'S COLLEGE OF PHYSICIANS IN IRELAND, AND PHYSICIAN
EXTRAORDINARY TO SIR PATRICK DUNN'S HOSPITAL, &c. &c.

Read, 7th September, 1829.

MODERN pathologists have applied the designation of gangrene to a diseased condition of the lungs, one of the most remarkable features of which, is the offensive fetid character of the expectoration. If gangrene, as it occurs in the external parts of the body, under the cognizances of our senses, be admitted as the standard of comparison, we shall find that the pathological condition under consideration, wants most of the constitutional symptoms and anatomic character of true gangrene, and that the fœtor which distinguishes it so far from being essentially characteristic of gangrene, is never present unless when in consequence of the moisture of the parts, putrefaction

takes place ; as when the urine is extravasated into the scrotum, and causes the death and decomposition of the loose cellular membrane, when it is not the gangrene, but the putrefaction of the parts which produces the offensive smell.

This modification of disease, unlike gangrene occurring as a termination of inflammation, never exhibits, at any period of its progress, any of the legitimate characters either constitutional or local, of genuine inflammation ; it develops itself in a constitution either naturally weak, or rendered so by previous disease, and such as we should, *a priori*, say would be unequal to the effort of healthy inflammation ; the internal mischief is not announced either by an acceleration of pulse or heat of skin. The patient first complains of a sharp pain in the side, which is soon succeeded by a profuse discharge of either pure blood, or of a mixture of blood and purulent matter ; he now feels himself much lighter, relieved as it were from a load, and enjoys an interval of ease, when he renews his complaint of his breathing becoming much oppressed ; he is again relieved by discharging a large quantity of mixed blood and pus ; he thus continues for some time alternating between comparative ease and distress, till a teasing cough with a fetid expectoration establishes itself, the sputa are generally of a greenish purulent character, floating in abundant thin mucous, and sometimes so acrid as to create a burning sensation in the throat ; the breath emits a most offensive fœtor ; the complexion is either a dusky yellow or a dead white, and always expresses distress and suffering. *The sallowness of the

* Vide notam, p. 102.

complexion which I had observed in two cases, led me to suspect that the liver was involved; however, examination after death did not confirm my suspicions, though in both cases the disease was confined to the right side. The constitution soon begins to sympathize, and hectic fever sets in, but by no means observes the regularity and uniformity of the hectic which accompanies phthisis pulmonalis. The emaciation proceeds; the appetite fails; nothing can allay the irritation of the cough; the fœtor of the expectoration is insupportable both to the patient and the attendants; the bowels become much deranged. If you inspect the chest you will observe, in general, the part corresponding to the affected portion of the lung quite motionless, as if it took no part in the act of respiration. Nothing is more uncertain than the duration of this disease, before it arrives at its fatal termination. I have had one case under my care for more than a year, and have known another which survived the first attack more than a year and half; if it be combined with tubercular phthisis, it runs a more rapid course, and has its character modified by the complication; in general, death seems to be owing to the irritation of the system, rather than to the extent of the local mischief. The anatomic characters of the disease identify it with Hunter's description of unhealthy suppuration or with what Travers describes as the results of Gangrenous inflammation, or inflammation whose powers are inadequate to carry it to a healthy termination; these results are imperfect adhesion, an unhealthy suppuration, and a vitiated effusion at the expense of the life of the

parts, complicated with a chemical decomposition of both fluids and solids.

The extent of the hæmoptysis, which generally ushers in the disease, precludes the supposition of the blood being supplied from any other source than from an opened artery, hence we may infer, that adhesive inflammation has not taken its ordinary precautions to limit suppuration and ulceration, which in consequence run an unchecked course, involving every tissue and structure in one general destruction; thus we have blood, purulent matter, and disorganized pulmonary tissue, all blended together, and exposed to the putrifying influence of the air; hence, we sometimes find the entire organ reduced to a blackish softened substance, not unlike the broken dissolved condition which we meet with in the spleen of persons who have died of protracted ague, or in those whose constitutions have been broken down by the effects of a tropical climate; at other times we find the disorganized lung resembling a quantity of tow soaked in a dirty brownish fluid, not retaining a trace of the cellular texture of true pulmonary tissue; again, we discover cavities of greater or less dimensions, whose internal surfaces consist of shreddy, jagged portions of the proper structure of the lung, exhibiting no appearance of the defined cyst of a tubercular cavity. There are, in general, opening into these cavities, bronchial tubes of various sizes, whose mucous surface is sometimes so deeply vascular, as closely to resemble, in colour, a portion of strangulated intestine on the eve of gangrene. I have, in more than one instance, observed

this highly injected appearance extending a considerable way up the trachea. The interspaces of the cavities usually present the softened pulpy state which we have above described, though we sometimes observe a feeble effort of inflammation an approach to hepatization, in which the altered structure resembles a portion of liver which had undergone maceration. The destructive ulceration sometimes makes its way through the investing pleura, then we have, superadded to the original disease, inflammation of this membrane, with purulent effusion and pneumothorax, a complication which expedites very much the fatal termination. The bronchial glands are, in general, unusually enlarged, and contain a blackish inky fluid. The weight of the diseased organ is considerably increased. When the disease is partial, involving only a portion of the lung, and is independent of tubercles, we find the disorganization remote from the apex of the organ, whereas if tubercles be present, they seem to direct it to the ordinary situation of the development of these bodies.

Dr. Hasting has noticed this morbid state of the lungs, in the 5th vol. of the Edinburgh Journal of Medical Science. He calls it a softening of the lungs, but does not attempt an explanation of the mode of its production; it seems to me to be of the same nature, as the unhealthy inflammation of phlegmonous erisipelas, anthrax, &c., its essential character consisting in slough and decomposition of the proper pulmonary tissue.

CASE I.

John Dunne, tailor, aged 19, of a thin delicate habit of body, was admitted into Sir Patrick Dunn's Hospital for fever, in the progress of which he was seized with a profuse expectoration of fluid arterial blood, which he said he had often had before his admission ; his pulse was small and rapid. (R. Misturæ Camphoræ 3v. Tinctur. digitalis gutts. xxx. Tinctur opii gutts. xx. Syrupi 3ss. Misce sumat unciam omni trihorio.) The hæmoptysis ceased ; in the course of the fever, he exhibited symptoms which gave strong grounds for suspecting effusion in the head, by becoming comatose, the pupils widely dilated did not obey the stimulus of light ; these symptoms, however, yielded to the application of cold wash to the shaved head, a blister to the nape of the neck, and sinapisms to the feet ; his febrile symptoms soon disappeared, but he complained of a teasing cough and palpitation of the heart, for which I repeated the camphor mixture and digitalis, with the following pills :—

R. Extract conii gr. viij.

Pilulæ ipecacuanhæ gr. iv. fiant pilulæ quatur una tertiiis horis sumend.

These lessened the heart's action and the irritation of the cough, but he was much debilitated, and perspired much at night. I in consequence ordered bark and sulphuric acid, and the tepid shower bath, from which he seemed to gain strength. I now lost sight of him for some time,

when he came to me to complain of the unceasing irritation of the cough ; he was much emaciated and decidedly hectic ; his breath and expectoration were extremely fœtid ; in all the right lung respiration could scarcely be heard ; under the left clavicle was imperfect pectoriloquy ; he died in two days from this, about six weeks since his first admission into hospital.

Examination fifteen hours after death ; head not examined ; the apex of the right lung adhered so firmly to the corresponding part of the cavity of the chest, that it could not be separated without breaking its structure ; this lung was much heavier than natural, and felt quite solid, except at its base ; the investing pleura was universally thickened, and in some places had acquired the density of fibrocartilage. The entire substance of the lung, except the base, was thickly studded with tubercles ; the pulmonary tissue surrounding these bodies was either broken down into a soft brownish sloughy substance, or so condensed, as to have its cellular nature quite destroyed ; there were many irregular cavities traversed by bands of pulmonary structure ; the surface of each cavity exhibited a blackish sloughy appearance ; the base of the lung was quite free from tubercles, but was in the first stage of pneumonia.

The left lung exhibited a similarly disorganized condition, the small irregular cavities were more numerous, and the intervening pulmonary structure softer, presenting the same dirty sloughy broken down appearance. On pursuing some of the bronchial ramifications which opened into these cavities, their lining membrane was highly

vascular, and, in some instances, black ; the base of this lung, too, was in the first stage of pneumonia, and free from tubercles ; the left cavity of the pleura contained about a pint of straw coloured serum ; the pericardium about eight ounces of the same fluid. There was also an infiltration into the subserous tissue, connecting the substance of the heart and the pericardium ; the heart was small and flabby ; the abdomen contained about two quarts of serum, all the viscera of this cavity were healthy.

We here have an instance of the disease, combined with tubercular phthisis, and, in consequence, running a much more rapid course, and exhibiting a more distinctly marked hectic fever, than the uncomplicated disease ordinarily does. As usual, it was ushered in by a profuse hæmorrhage, to which succeeded cough with fœtid expectoration, as in ordinary phthisis, the superior portion of the lung was the point de départ of the disease.

A striking circumstance in this case is, the effusion into all the serous cavities, which I suspect also took place into the brain, when the coma, dilated pupils &c. gave evidence of its existence.

CASE II.

Arthur Maguire, aged 37, labourer, in embarking for England where he was going to reap the harvest, in climbing the side of the vessel, fell into the river, and continued in his wet clothes till he reached Liverpool. About five days after his arrival, he was seized with stitches in his left side, and soon began to spit blood and matter, in

consequence of which he was obliged to return to this country. Immediately on his return he was attacked with a profuse expectoration of unmixed blood, which continued to flow from him without any effort of coughing; he had blisters applied to his side, and took pills which I ascertained to consist of acetate of lead and opium; these gave a temporary check to the hæmorrhage.

On the day of his admission into hospital, he discharged about a quart of fluid arterial blood; his countenance was pale and exanguious; his pulse feeble. He referred the pain to about a hand's breadth below the left breast, and more external. Pectoriloquy with bruit amphorique was distinctly heard in this point, this side was more prominent than the right, and on percussion, yielded a dull sound inferiorly and posteriorly, where respiration could not be heard. (Diagnosis, cavity with communication with the cavity of the pleura, and effusion into the left side. Rx. Misturæ Mucilaginosæ 3v. Tinctur. digitalis. Acidi sulphure dilut ăā. 3ss. Syrupi Tolutani 3vij. Misce sumat unciam 3tiis. horis.) The spitting of blood ceased, but was succeeded by cough with purulent expectoration, which soon became so fœtid, that it was disagreeable to approach him. At intervals he discharged pints of greenish matter, which sometimes resembled in colour and consistence the yolk of egg; previous to these discharges his breathing became very much oppressed, but was immediately relieved on their taking place. Pills of conium and ipecacuanha for a short time relieved the irritation of the cough; the pain in the side was most distressing; blisters afforded him a short intermission of the pain, but

it soon returned with equal intensity. His countenance expressed great distress, and suffering ; no narcotics could procure him sleep ; he became much emaciated, his appetite completely failed ; an obstinate diarrhœa set in ; at night had most profuse perspirations. He survived these symptoms a very short time, having died seven weeks from his admission into hospital.

Examination four and twenty-hours after death. On opening the thorax, a considerable quantity of air escaped from the left side ; there was an effusion to the extent of two pints of thin greenish purulent fluid into the left cavity of the chest ; a dense coating of lymph connected both pleura pulmonalis and costalis on this side in all points, except along the side of the spine, where these two membranes firmly adhered ; the lung was compressed to about two-thirds of its natural size ; the superior half was quite free from disease ; in the middle of the organ, and about mid-way between the anterior and posterior margins, there was a cavity capable of holding a hen's egg, not lined with any defined membrane, but by the unequal jagged sloughy tissue of the lung ; this cavity opened into the cavity of the pleura by an irregular opening about the size of a half crown piece. Into the large cavity several smaller ones opened, all presenting the same unequal sloughy appearance. The base of the lung was hepatized, the bronchial glands were much enlarged, and contained an inky fluid in their centre ; the right lung was quite free from disease. This case resembled pneumonia in its anatomic characters more than phthisis, but

in its constitutional symptoms, at no period did it evince the high inflammatory action of true pneumonia.

I shall content myself with making a very few remarks on the next case, as the length of time which it was under my care (more than a year,) prevents me giving a detailed history of it.

CASE III.

John Walsh, aged 41, weaver, from exposure to cold was seized with a stitch under his right breast, for which he took some medicines without relief; in ten days he was affected with cough and spitting, and at the end of the fifth week discharged a pint of purulent matter; from this period the disease assumed its ordinary character of cough, with foetid expectoration. The patient's complexion was of a dirty sallow hue, the pulse did not generally exceed 70 in a minute; at intervals more or less remote he discharged pints of thick purulent matter, which relieved his breathing very much; the disease gradually sapped the powers of the constitution; before death the right side of the chest was quite motionless; it did not seem to act in respiration.

EXAMINATION.—The body very much emaciated; the right pleura pulmonalis and costalis adhered so firmly, that with great difficulty could they be separated; the lung was much heavier than natural. On making a section of it from its apex to its base, there were innumerable small cavities with sloughy broken surfaces; the general structure of the organ resembled the dirty greenish

softened pulp, to which we sometimes find the spleen reduced; a thin blackish matter exuded, emitting a most disgusting foetor.

The left lung was healthy.

CASE IV.

John King, aged 24, of a sallow unhealthy appearance, states, that about a month since, from exposure to cold when in a state of intoxication, he was seized with a severe pain in the right side; this was soon followed by cough, profuse spitting of blood, and difficulty of breathing, for which he took no remedy for a week; then he applied to a dispensary, when he was bled, got medicines, and had a blister applied to his side; these means afforded him some relief; but he still continued to expectorate large quantities of blood, and also passed blood from the bowels.

January, 22.—Countenance of a pale leaden hue; lips white and bloodless; pulse 120; respiration weak; very much hurried; great prostration of strength; appetite quite gone; excessive thirst; cough very teasing, coming on in paroxysms; breath most offensive; sputa have the appearance and smell of putrid blood; he sometimes discharges nearly a pint of this blood at a time, and seems to vomit rather than expectorate it; from which, and from his discharging it by the bowels, I fancy he swallowed it in the fits of coughing; is constantly bathed in cold clammy perspiration. Percussion and auscultation bespeak the left lung healthy; the right side of the chest sounds dull, in its superior two-thirds both anteriorly and pos-

teriorly. Gargouillement, cavernous respiration, and imperfect pectoriloquy heard to the same extent anteriorly. (R. Infusi lini 3v. Tinctur. digitalis. Acidi sulphuric dilut aa. gutts. xxx. Tinctur. opii camphorat 3iij. Syrupi 3ss. Misce sumat unciam secundis horis.)

23d.—No alteration of symptoms ; prostration increased ; foetor of breath and bloody sputa so offensive, as to excite vomiting ; cough very distressing. (Pil e conio et ipecacuan.)

No medicine afforded him the slightest relief ; he died four days after his admission into hospital.

Body not much emaciated ; almost the entire of the right lung was hollowed out into a cavity, containing a large quantity of grumous blood in a state of putrefaction ; this cavity was lined by a membrane, the small remains of pulmonary structure in its immediate neighbourhood had undergone imperfect hepatization, and resembled liver that had been macerated ; the left lung quite healthy ; the pleura investing its base, and also, the corresponding portion of this membrane lining the diaphragm, were converted into fibro-cartilage ; the heart was small and flabby.

The abdominal viscera presented no unusual appearance, except of being universally blanched.

Though the disorganization in this case was so considerable, as to involve the greater part of the lung, it was still one of circumscribed gangrene, the constitution having made the best efforts it was capable of, to isolate the disorganized substance.

Death, in this instance, seems to have been the result

of the hemorrhage, and the irritation produced in the constitution by the blood effused into the lung, undergoing putrefaction.

This case convinced me of a circumstance which I had long suspected, that profuse discharges of blood which occur when we know the lungs to be the organ affected, often come from the stomach, and take place by the patient swallowing the blood, which comes from the lungs, and which when it has accumulated in the stomach, excites vomiting.

I have met with two cases, in which the disease developed itself in the progress of fever.

NOTE.—I apprehend it was the dusky yellow complexion, with deranged digestion, (which almost invariably accompanies this modification of disease,) that led Dr. Wilson Philip to charge this morbid condition upon the liver and digestive organs, and to designate it dyspeptic phthisis; however, from the description he gives of dyspeptic phthisis, I suspect the deranged digestion is to be regarded rather as an accidental complication, than as the cause of the disease, for he asserts, that in fatal cases the liver affection often disappears, leaving no traces of its existence after death. I should account for this extraordinary disappearance of the marks of disease in the liver, by supposing they never existed; and that there was nothing more than a mere functional derangement of the digestive organs; besides, the single case which he produces, in evidence of the changes which the diseased liver undergoes, and which case we may regard as a selected specimen, exhibits an altered condition of the liver, which, to say the least of it, is not commonly met with in persons who have died of phthisis. In this case, the condition of the liver is thus described:—"The liver was greatly enlarged, firmer than natural, and, in some places, cartilaginous." The liver, no doubt, is often found much enlarged in persons who have fallen victims to phthisis, but its consistence so far from being firmer, is almost invariably softer than natural; it is in fact the enlarged pale yellow liver of persons eminently scrofulous. I have never met with, and in this case for the first time have I heard of the liver being converted into cartilage;

the organ sometimes has its natural structure to a considerable extent changed into a fibro-cellular substance, but in this instance so far from being enlarged, it is contracted and shrunk in its dimensions.

When Dr. Philip observes, it is surprising the state from which he has seen the lungs recover on the removal of hepatic irritation, I suspect, had he employed auscultation, he would have ascertained the integrity of the organ, and that this state of the lungs consisted in mere functional disorder. I cannot help questioning the accuracy of Dr. Philip's views on this subject, when I find him asserting that he has seen a person in the last stage of phthisis saved, by the glands of the neck swelling and suppurating.

I have deemed it necessary to dwell thus long upon this point, from a feeling of the important practical consequences which it involves; for if phthisis be essentially a scrofulous disease, whoever has witnessed the effects of mercury when pushed to any extent in the treatment of syphilis in a scrofulous habit, will appreciate the necessity of being satisfied of the reality of a complication, which will lead to the employment of this mineral, whose direct tendency is to excite an erethismus of the constitution, favourable to the development and maturation of tubercles. Two cases, in illustration of this fact, have come within my knowledge; one, a young man who left this country with unequivocal signs of incipient phthisis, and in London, placed himself under a practitioner, who, in almost every modification of disease, saw affection of the liver; mercury was freely employed, till the system was brought under its influence, when tubercles quickly appeared, and rapidly proceeded to softening, and death soon followed.

The next case was one of phthisis in almost its last stage; as in the preceding instance, the liver was considered the offending organ, and the pulmonary affection a mere secondary result. An entire change of system and treatment was immediately adopted, which certainly did not retard the fatal termination, though I am sure it did not hasten it much. I never saw a more genuine uncomplicated case of phthisis than this; it was brought on by the individual lying in damp sheets. Several cases of this kind have come within my knowledge, in all of which, the derangement of the liver and digestive organs was regarded as originating the pulmonary disease; in fact, since the appearance of Dr. Philip's work on Indigestion, dyspeptic phthisis has become a fashionable disease, and some physicians conceive that in every case of phthisis, the digestive organs are primarily affected. Far be it from me to charge on Dr. Philip the errors of

his medical fraternity, or to derogate in the slightest degree from that respect, to which, as an authority on all medical subjects, I consider him most justly entitled—

“ Neque ego illi detrahere ausim,
“ Hærentem capiti multâ cum laude coronam.”

But at the same time, I feel that the eminence which he occupies, does and ought to expose his opinions to a proportionably rigid scrutiny, liable as they are to be adopted as the creed of so many, who have neither ability nor patience to examine their justice.

ROBERT LAW.

Rutland-square.

HÆMATEMESIS,

DEPENDANT

UPON DISEASE OF THE LIVER,

BY

ROBERT LAW, A.M. M.B.

&c. &c. &c.

Read 5th October, 1829.

MARY FREYNE, aged 43, married, four days since was suddenly seized with vomiting of blood, and had bloody discharges from the bowels, which continued up to the period of her admission into hospital. On the day on which she was admitted, she vomited not less than a quart of coagulated blood, and exhibited all the symptoms characteristic of such a loss; countenance pale and exanguious; lips livid; expression anxious; temperature of lower extremities below the natural state; surface of the body bedewed with cold clammy perspiration; pulse frequent and feeble; fluttering of the heart; voice faltering; (entrecoupée.)—(R. Infusi rosæ 3v. Sulphat. magnes. 3vi.

Acid sulphunic dilut 3ss. Tinctur digitalis gutts. xxx. Misce, sumat unciam 3tiis. horis, vini rubri 3vi. Legs to be wrapped in flannel ; jars of hot water to be applied to the feet.)

November, 28.—Vomited very little blood, but had frequent tarry discharges from the bowels ; seemed quite exhausted ; pulse very small and thready ; surface of the body cold ; countenance anxious ; frequent sighing ; all her symptoms bespoke approaching dissolution. Wine not seeming to revive her, I substituted French brandy ; she died in the course of the evening.

Examination fifteen hours after death ; body not in the least emaciated ; lungs quite healthy ; heart soft, flabby and pale, containing a small quantity of fluid blood ; a small quantity of serous fluid in the abdomen ; the stomach contained about a pint of blood, and the intestines much of the black tarry matter which was discharged by the bowels. The entire tract of the gastrointestinal mucous membrane so far from exhibiting any unusual vascularity, seemed quite blanched.

The liver presented an irregular tuberculated or granulated surface ; was contracted in size ; its anterior margin much less acute than natural. A section of it exhibited small round bodies of various dimensions, separated by dense fibro-cellular septa ; this fibro-cellular tissue seemed to be the proper cellular tissue of the organ increased in density, furnishing loculi or capsules to these roundish bodies, which are probably the acini in a state of hypertrophy ; these bodies adhered loosely to their capsules, and could be easily detached from them ; the con-

sistence of the organ was greater than natural ; its colour a whitish grey.

CASE II.

Peter Quinn, aged 38, waiter at an hotel, was admitted into hospital November, 1827, for vomiting of blood, which was soon followed by ascites ; the ascites yielded to mercurial medicines and vegetable diureticks ; he was discharged cured in January, and continued well till the ensuing September, when he was again seized with vomiting of blood, and with dropsical swellings, not only of the abdomen, but also of the lower extremities and the scrotum ; his breathing was short and laboured ; the entire surface of the body was of a yellow jaundiced hue.

Every species of medicine likely to relieve his symptoms was employed, but failed to make the slightest impression on the disease ; and the distress of respiration became so urgent, that I directed the operation of paracentesis abdominis. Peritoneal inflammation set in, twelve hours after the operation, which I attribute more to his being allowed to remain all night in sheets wet with the discharge from the puncture, than to the operation itself. He only survived the attack thirty-six hours.

Examination twenty-four hours after death ; body not emaciated ; lungs healthy ; heart small and flabby.

A large accumulation of straw coloured serum in the cavity of the peritoneum ; peritoneum investing the anterior parietes of the abdomen and the intestines highly injected and thickened.

Mucous membrane of the stomach exhibited a general red injected appearance ; that of the intestinal canal rather pale.

The liver presented the same irregularity of surface and deviation from natural structure, as I have described in the preceding case. I could adduce two other instances whose symptoms during life, and appearances after death, exactly resembled those I have already detailed, death was caused by hemorrhage in each, and examination exhibited the granular condition of the liver.

These cases unequivocally prove the vomiting of blood to depend upon the peculiar alteration of structure of the liver, which was found to exist in all ; and it is remarkable, that although almost every pathologist has noticed this deviation from natural structure in the liver ; Frank seems to be the only one who has observed how often it and hæmatemesis stand to each other, in the relation of cause and effect.

This diseased condition of the liver would seem to consist in an entire change of the proper substance of the organ, into a dense fibro-cellular tissue, forming a kind of pulp or parenchyma, in which the roundish bodies (which projecting on the surface, give the organ its irregular appearance) are imbedded, its specific weight is greater than natural, while its actual size is less, and so far from passing the margin of the ribs, it seems to have receded within its ordinary bounds, showing how fallible a criterion of the health of the organ, is either its size or its descent below the ribs ; its form is altered ; it becomes more round ; its anterior margin more obtuse ; its division into

lobes less defined ; its peritoneal covering thicker and more opaque than natural ; its section exhibits no trace of blood vessels, which we may presume to be either compressed or obliterated by the altered structure ; hence the impediment to the *vena portæ* pouring its blood into its ordinary channels, and the influence of the obstruction reverts upon all the branches which concur to form this vein, and thus we do satisfactorily account for the hemorrhage ; this fact would tend to confirm an opinion of the ancients respecting the office of the liver ; that it was a diverticulum or reservoir of the abdominal venous circulation. As this pathological condition of the liver is most frequently met with in persons who have indulged freely in the use of ardent spirits, and as we know that the direct tendency of such an indulgence is to produce a chronick inflammation of the *gastro-intestinal* mucous membrane, would it be pushing conjecture too far to suppose the disease of the liver to depend upon the extension of inflammation, from the intestine along the *ductus communis choledochus* ?

The period of life most subject to this disease is from thirty to forty-five ; young females whose menstruation is irregular, suffer profuse discharges of blood from the stomach with impunity ; but in these instances, judging from the situation of the pain which precedes the discharge, and from the description which they gave of the sensation they experience as it were of a sponge distended with moisture, pressing out the lower ribs on the left side, it would seem as if the spleen were relieving

itself from a temporary congestion ; here, too, neither the dropsy, nor jaundiced hue of the skin are present.

It unfortunately too often happens, that the disease of the liver which we have been considering is so insidious in its progress, and excites the alarm of the constitution so little, that either dropsy or hæmatemesis gives us the first intimation of its existence, when unhappily the organ has undergone such alteration of structure, as to render the effects of medicine at least uncertain ; should vomiting of blood first bring it under notice, this alarming complication will be the absorbing object of our attention ; and though our patient survive this first attack, we cannot calculate on its not soon returning again, when we consider the permanency of the cause on which it depends. We next have to grapple with the original disease, and its consequent dropsy, and not unfrequently with a chronic inflammation of the peritoneum, which often complicates this morbid series. The treatment which I employed in Quinn's case, and which was followed by at least a temporary success, consisted of blue bill combined with Dover's powder, and frictions on the right side with an ointment composed of mercurial ointment and hydriodate of potash, vegetable diureticks and occasional warm baths ; these means, steadily pursued for six weeks, accomplished the cure of the dropsy, and this treatment too, I should generally adopt in similar cases, as most calculated to meet the several indications of this morbid complication.

Since the preceding paper has been submitted to the notice of the Association, two other instances of this granulated condition of the liver have come under my obser-

vation, both laboured under ascites and general dropsy; one died of hæmatemesis, and the other sunk after tapping the abdomen. The subject of this latter case, in detailing the history of his illness, stated that he had had repeated vomitings of blood since its commencement; thus, in six instances, have I observed the coincidence of hæmatemesis and granular liver, from whence I conceive we are warranted in considering, that the discharge of blood depended upon the altered structure of the liver. I have further observed, that this is the only diseased condition of the liver which gives rise to vomiting of blood.

ROBERT LAW.

Rutland-square.

A CASE OF
CANCER OF THE UTERUS
AND ADJACENT PARTS, WITH OBSERVATIONS
BY
JOHN BEATTY, M.D.

LICENTIATE OF THE KING AND QUEEN'S COLLEGE OF PHYSICIANS IN IRELAND.

Read, October 5, 1829.

RACHAEL COLLINS, aged 54 years, a confidential servant in a gentleman's family, where she had been employed as wet nurse twenty-two years ago, complained to her mistress of certain feelings, for which my advice was requested in May, 1828.

She stated that she had had profuse uterine discharges of blood at irregular periods for some years past, attended with some pain round her loins, and down her thighs, with loss of appetite, and debility; that when the flow of blood was absent, a most offensive and scalding discharge of greenish yellow matter took place, which, if not soon removed, excoriated the labia and adjoining parts.

I examined, and found the os uteri low in the vagina, in a perfectly carcinomatous state, with a very large cauliflower like surface, painful to the touch. She had borne

two children when young; but for several years past had not cohabited with her husband, whom she represented as a man of bad conduct. Having given such advice as appeared necessary in her hopeless state, I saw little more of her until July 1829, when my attention to her was again requested by her mistress.

All her symptoms had now increased very much; but being of a mild and patient disposition, she did not express the amount of suffering that might be expected. Her principal complaint was of inability to pass her stools from what she termed a lump in the passage, and almost incessant vomiting. This I endeavoured to relieve by mild injections, and while they could be received, the object was in part attained; but after a time, the increase of the tumour rendered it impossible to throw up any fluid. I then tried a suppository of soap in the rectum, which produced temporary relief. In a few days the nurse-tender informed me that the stools came from the vagina, when she endeavoured to pass water, yet the absence of any feculent smell led me to doubt this statement. In this miserable state she lived until the 18th of September, 1829, and on the following day the body was examined by my sons.

The dissection and report by T. E. BEATTY, A.B. M.D. Member of the College of Surgeons in Ireland, and Wm. C. BEATTY, A.M. M.B. Fellow of the King and Queen's College of Physicians.

The body was much emaciated, and exhaled a very strong cadaverous odour. The vulva was dilated, and

the mucous membrane lining the vagina and labia, was of a dark chocolate colour, and thickened. A foetid discharge of a thick purulent nature oozed from the vagina. On opening the abdomen, the large intestine was found contracted and empty, with the exception of a few small scyballæ in the upper part of the rectum.

The urinary bladder was dilated, but empty, and the peritoneum covering its upper and back part was very thick and strong. The uterus appeared very little enlarged; it felt firm, and a number of minute blood vessels were seen ramifying on its surface. A convolution of the ilium near its termination dipped down into the pelvis, and passed in a curved line from left to right, between the upper and back part of the vagina, and the rectum. On endeavouring to draw up this fold of intestine, it was found to adhere to the organs between which it passed. Ligatures were carried round this intestine at both ends of the curve, and all the part included between them was detached from the rest of the bowel, leaving the adhering part *in situ*. The rectum was also cut across at the upper part, and the whole contents of the pelvis were removed together. Some difficulty was experienced in detaching the left side of the rectum and vagina from the pelvis, in consequence of their being connected to it by a firm mass, which it was necessary to cut through.

On slitting up the back of the rectum, the lining membrane presented the same dark appearance as the interior of the vagina. The anterior surface was perforated by an irregular ulcerated opening, about an inch in diameter, the edges of which were thick and hard, and the adjoin-

ing part of the bowel partook of the same carcinomatous texture. This opening communicated directly with the vagina, to which the rectum was here firmly attached; in fact these two, with the portion of the ilium described, were all blended into one mass of cancerous tumour, which, on opening the vagina, was found to proceed from the os uteri. The ilium, like the rectum, had a free communication with the vagina at the point of adhesion. The back of the bladder had been also contaminated, and a large opening between it and the anterior part of the vagina was discovered, the edges of which were thick and irregular. The mucous membrane lining the bladder was thickened, and that of the urethra had the same dark appearance that was found in the rectum and vagina. The body of the uterus when cut into, presented a dense white cartilaginous surface, its cavity was filled with pus, and the lining membrane very vascular. From the os uteri a large cancerous mass projected, which adhered to all parts in its vicinity, and had produced the ulcerated communications already described.

A remarkable feature in this case is, the connexion of the portion of small intestine, with the mass of disease in the pelvis. It illustrates strongly the tendency of cancer to spread to all parts that come into contact with it. This circumstance, however, I should imagine, contributed in no small degree to alleviate her sufferings, by affording a ready outlet to the contents of the bowels, and thus preventing any accumulation in the large intestines, while at the same time the fœces passed off in a comparatively inoffensive state, as the peculiar odour is not imparted to

them until they enter the cœcum. This accounts for my incredulity with respect to the nurse-tender's account of the stools coming through the vagina, for although the contents of the bowels must have passed that way for some time, yet both in form and smell they differed from the ordinary feculent discharge, and thus was the patient saved from this terrible aggravation of her misery.

This case is in perfect accordance with an observation I have made for a great number of years, that in almost every instance where I have been consulted for cancer of the uterus, the disease has arisen in persons who, while young, had either lost their husbands, or separated from them. I do not remember to have met with an instance of the disease, in which an early interruption of connubial intercourse had not taken place. A remarkable case occurred to me in 1814, in which I acted upon this principle, and by recommending a restoration of conjugal rights, succeeded in checking the disease.

A lady and her husband, after having had children, had lived very much asunder for some years, and at the time I have mentioned, I was consulted by the lady, in whom incipient cancer was now evident. She complained of pain and weakness in the loins, so great as almost to incapacitate her from walking; this was accompanied with a sense of bearing down, and a leucorrhæal discharge.—Acute pains shot from time to time across the pelvis, and the digestive organs were very much deranged. The os uteri was found lower in the vagina than is natural, and presented a thickened, irregular, and indurated surface, painful to the touch. The upper part of the vagina was

also hard to the feel, and the rugæ were considerably obliterated. A consultation was held with two physicians of the most extensive experience in this kingdom, to whom I reported the result of my examination. One of the gentlemen having made a similar examination, confirmed my report and opinion, and they both agreed in recommending a total separation of beds, as the plan most likely to prolong a life which must become a sacrifice.

I mentioned the observations I had made on patients labouring under cancer of the uterus, and expressed a hope that if connubial intercourse were restored, the progress of the disorder might be arrested. The idea was new to them, but they readily acceded to my proposal. The husband returned to his wife's bed, and the result was, the birth of a healthy child in less than a year.

A perfect restoration to health followed, which has continued without interruption, though fourteen years have elapsed since the child was born. The lady from having been emaciated and worn down, recovered her flesh and good looks, and has mixed freely in the upper class of society ever since.

JOHN BEATTY.

Molesworth-street,
1st Oct. 1829.

A SINGULAR CASE
OF
EXTRA UTERINE PREGNANCY,
BY
ROBERT COLLINS, M.D.

LICENTIATE OF THE KING AND QUEEN'S COLLEGE OF PHYSICIANS, AND MASTER OF THE
LYING-IN HOSPITAL, DUBLIN.

Read, 7th December, 1829.

HONOR CORMICK, aged 35, was sent to the hospital (from a distance of twenty miles,) on the 31st of August, at 11 o'clock, a. m., reported to be suffering from retention of urine and retroversion of the uterus.

On examination per vaginam when admitted, I found a large tumour pressing down between the vagina and rectum, so low, as nearly to press on the perinœum, and on introducing the finger into the rectum, it was found to fill the entire hollow of the sacrum. The tumour was tense, and in some parts elastic; and in one or two places fluid could be felt.

When the hand was placed on the abdomen in the region of the bladder, a large elastic tumour was felt, which, on

first examination, I took for the distended bladder; however, on the introduction of a long gum elastic catheter, not more than a table spoonful of urine came away.— Several catheters were introduced all with the same effect, yet the tumour still remained.

The woman had passed about half a pint of urine without assistance after she came in, and as but a small quantity came away on the introduction of the catheter, and not only that, but the flexible catheter could be distinctly felt, coiled up in the bladder immediately behind the pubes; it was concluded that the tumour above the pubes could not be the distended bladder.

The urine had been drawn off the day previous to her entering the hospital, by the surgeon who sent her in, and several attempts had been made by him on the morning of the day she was admitted to introduce the catheter, but without effect. The flexible catheter however passed into the bladder with little difficulty.

Her pulse, when admitted, was about 130; her countenance indicated much distress, and it was evident her strength would not hold out for any length of time, if some immediate relief was not procured; in fact, death seemed near at hand. She had given birth to a child about fourteen months ago, and had weaned it about eight or nine weeks. She had always been in good health until five weeks previous to her coming to the hospital, at which time she said she received a fright, in consequence of some family arrangements going contrary to her wishes. She had no very urgent distress until the day before she was admitted, when she became unable to pass her urine.

For the last five weeks she had been complaining of shooting pains through the abdomen, and a bearing down feel about the loins and pelvis, with frequent desire to pass urine, although she had no difficulty in doing so. She stated her bowels to have been always regular. She said, she did not know whether she was pregnant or not, as she had no menstrual discharge for nine weeks, and she also added, that she never had had more than one change from the time she weaned her child, until she became again pregnant; she had five children.

The tumour in the vagina did not feel like the retroverted womb when pregnant, yet the os uteri was dragged quite close under the arch of the pubes, but the orifice of the urethra was not displaced.

I introduced several instruments through the mouth of the womb, for the purpose of rupturing the membranes of the ovum if she were pregnant, but no membranes could be felt, nor did any water come away, notwithstanding I passed instruments curved in different directions, at least three inches within the cavity of the uterus.

Frequently on the introduction of a large catheter, when it was withdrawn, something resembling small hydatids were found in the openings which were in its extremity, and which had been made large for the purpose of drawing off the urine in a case where it was of thick consistence, and in one instance, a few drops of bloody fluid came away.

These circumstances led me still more strongly to suspect that she was not pregnant, and that the uterus must be distended either with hydatids, or some soft fungus

tumour; but as it was doubtful, I called in the consulting physician, Doctor Labatt, and Mr. Colles, the consulting surgeon. The former suggested, that the tumour in the vagina might be in consequence of enlargement of the uterus itself; and the latter suspected that it might prove to be fungus haematoxodes of the uterus.

The os uteri was not more dilated than to admit the passage of a large catheter, and the mouth of the womb was thick and unyielding, so much so, as to forbid any attempt to pass even the finger into the uterus.

When the patient was placed on her elbows and knees in bed, by gentle efforts with some of my fingers in the vagina, and the fore finger of the left hand in the rectum, I was able to raise the tumour as high as the natural situation of the uterus; but as soon as the hand was withdrawn, it fell down to its former situation.

We now agreed to leave her to the following day, as she was extremely feeble, and in the mean time, have the bowels opened, the abdomen frequently stupefied, and to give her an opiate at bed time, as she had not slept for several nights.

She was ordered an ounce of Castor oil, with three drachms of tincture of Jalap, which was repeated in the evening, as the first had no effect.

September 1st, 9 o'clock, a. m., pulse 140, and very feeble; tongue tolerably clean; countenance sunk and ghastly; skin cold and clammy; bowels have not been opened; stomach rejected the second, and also a third draught which she got; drinks very little, and her stomach

rejects every fluid; wine whey, cold chicken broth, beef tea, wine and water were tried, but very little of these remained on the stomach.

Ordered the common saline effervescing draught, with the addition of one ounce of Rochelle salt to eight ounces, to be taken with lemon juice every half hour, until the bowels yielded; also to have an injection thrown up every second hour, with a large syringe and long flexible tube.

One o'clock, p. m. (hour of consultation) continues much in the same way as in the morning; bowels have not been opened, although she has taken the draught every half hour, and her stomach has been somewhat settled by it.

Ordered one grain of calomel every second hour; draughts to be continued; injections to be thrown up frequently, and the abdomen stupefied.

9 o'clock, p. m., pulse 140, and very feeble; she seems gradually to become more exhausted; bowels have not been opened; stomach now rejects the draughts and calomel powders; also her drink.

Ordered two pills, each containing five grains of calomel, and a quarter of a grain of opium, one to be taken at 10 o'clock, and the second in three hours; injections to be given frequently. To have some beer to drink, for which she expresses a wish.

September 3d, 9 o'clock, a. m., she expired at 4 o'clock this morning, and her bowels had not been opened previous to death.

2 o'clock, p. m., on opening the parieties of the abdo-

men, the small intestines presented appearances of inflammation in many parts. A quantity of blood was seen in the hypogastric region among the intestines; the pelvis was filled with coagulated blood, and on passing the hand into this cavity, it discovered a firm body larger than an orange, and of a globular form, which it required some slight force to raise. This tumour had burst, and a foetus about two months old, was expelled from a cavity in its centre; however, it was still attached to the interior of the sac by the funis.

The uterus was somewhat larger than natural, and there were some very small excrescences growing on its interior surface, some of which had come away at the time the catheter was introduced. In other respects the uterus was quite healthy, and on the most minute examination, both of the uterus and fallopian tubes, not even a trace of an opening could be found, so that the foetus must have been formed without the uterus, from the period of impregnation.

The fundus of the uterus was forced considerably backwards and downwards, but the sac in which the foetus had been formed, was the tumour before mentioned, that was felt pressing so low on the introduction of the finger, both into the vagina and rectum, and the effused blood added greatly to its bulk and elasticity. In fact, the cavity of the pelvis was completely filled with blood, and it is most probable that it had been escaping for several days previous to death; perhaps, in consequence of the escape of the foetus from the cavity in which it was formed, and also in consequence of a partial separation of the sac from

the part to which it was attached, as it was adhering very slightly when it was discovered, and the entire sac, with the foetus attached to it, was lifted out of the cavity of the pelvis, without using much force, nor was there the slightest connexion between it and the uterus, or its appendages.

ROBERT COLLINS.

Lying-in Hospital,
Dublin, November, 1829.

CASE OF
HYDROPHOBIA,

BY
J. H. PURDON, JUN. M.D.

BELFAST,

COMMUNICATED BY DR. OSBORNE.

Read, 7th December, 1829.

MR. HARVEY, aged 42, on the evening of the 8th of June, 1829, was *nipped* in the left cheek by his dog, (which was chained,) but so slightly, as not to attend to it at the time. On the next morning, about eight a.m., when passing through the yard, he stopped to pet him, when the animal bit him in the right arm, about three inches above the wrist, one of his teeth passing (through the clothes,) for about an inch obliquely under the skin, and at the bottom of the wound slightly into the fasciæ. The dog was immediately destroyed at the request of one of his relations, without, however, any suspicion that it was rabid, having both ate and drank freely up to the day on which it was shot. Mr. H. arrived in town about 10 a.m., and my father (for whom he enquired) not being at home, a cupping glass was applied, the margin of which, extended

beyond the bottom of the wound. When my father arrived, the skin, fasciæ, and part of the muscles (which, however did not appear injured,) were removed even beyond the circle made by the glass, and the wound dressed with lint. When leaving the house, Dr. O'Neil of Comber, who came with him, mentioned the injury received in the cheek, but Mr. H. would not allow the piece to be removed, saying it was too slight to require any attention, and indeed scarcely any mark was visible ; however, Nitrate of silver was applied to it the next day by Dr. O'Neil. The wound in the arm was desired to be dressed with Ung. Hydrarg. occasionally mixing some Ung. Sabinæ with it, so as to keep it open ; he was also directed to use mercury both internally and externally, until the constitution should be affected. This plan was pursued for two or three weeks, but not being under our immediate care, as his place of residence was at some distance, and his business that of nursery-man, requiring him to be frequently out of doors, he then became careless, and finally omitted it entirely, allowing the ulcer to heal, which it did readily. From that time until the attack, he said he had been in better health than for some years previous. With respect to his sensations and behaviour immediately prior to the appearance of the symptoms of hydrophobia, it is impossible to state particularly, as for the last six or eight weeks he uniformly tried to avoid us, probably because he was constantly urged to continue the system laid down, and keep the wound open, both of which at this time he had completely neglected, and from what we have learned, the mercury never had the slightest effect. His

friends mentioned that for some days he had been rather melancholy, and he said he had unpleasant dreams for a few nights previous to the attack, but was unwilling to speak about them.

About the 24th of August he felt a slight pain in his left ear, and he said probably in his cheek, but of this he was not certain, not attending to it, as for several years he had been occasionally subject to rheumatism in that side of his head.

August, 31st.—Drove himself into town; was in perfect health to all appearance; dined with a friend; ate a quantity of fruit; drank rather much wine; felt unwell during the drive home, so much so, as towards the end of it to be obliged to resign the reigns to a friend; became worse during the night, and vomited freely.

September, 1st.—Early in the morning took some calomel, and as it did not operate, he got up about 10 a. m. for the purpose of taking a solution of Epsom salts, in the act of raising which to his mouth, he unexpectedly found himself have such an aversion to the liquid, that he was obliged to give up the attempt. During the day some soup was offered to him, which he found himself not only unable to take, but unwilling to look at.

In the evening Dr. O'Neil was sent for, who finding his pulse frequent, and attended with some cough, bled him to ten ounces. No uneasiness was shown at the flowing of the blood.

At 11 p. m. my father and I were sent for. On our arrival at his house we found him affected with great difficulty in swallowing liquids, and unpleasant sensation

when poured from one vessel to another within hearing. The light of the candle was disagreeable. He said he thought he could swallow solids without difficulty, but they were not tried at that time. In the act of deglutition there is a sense of suffocation, and a "feeling as if the fluid passed over a swelling" in the plarynx, at the upper part of the larynx. Immediately after it has passed this point, there is a spasmodic action of the diaphragm, causing the inspirations (for three or four times,) to be short and rapid. Except after swallowing, there is no difficulty in respiration. The saliva is swallowed with ease ; there is a short frequent cough, sense of tightness in the epigastrium, without pain on pressure ; no headache ; pulse 90 ; bowels have been confined for two days ; great anxiety apparent in countenance, as also in the motions and manner of protruding his tongue, which is moist, and rapidly retracted. There is some pain in the back of his neck, but no tetanic affection of the muscles. No tenderness in the arm nor cheek, nor was there any redness visible at the part where he was nipped. Rubbing the finger along the fossa between the larynx and sterno mastoid, produces a hurry in breathing. Skin moist ; is perfectly sensible, and wishes to have his friends in the room.

He was given immediataly twelve drops of Majendie's solution of the acetate or Morphine, in about half an ounce of water ; it was put into his mouth after he had shut his eyes, and in the deglutition had rather a severe paroxysm. The Nitrate of silver was rubbed along the course of the nerves on the left side of the larynx, so as to produce an eschar, but was not applied to the other side, as it pro-

duced a difficulty of breathing for some seconds, and an uneasiness, which he compared to a stream of electricity passing down the œsophagus to the stomach.

To take twelve drops of the solution every three hours, twenty grains of calomel immediately, and ten every three hours afterwards; and to rub in as much mercurial ointment as possible.

September, 2d.—Paroxysms much the same, but only when trying to swallow liquids; has had four offensive evacuations; tongue and skin moist; no tightness of epigastrium; pulse 72, weak, regular; slept a little towards morning; day-light not unpleasant; unwilling to look at silver; likes company, but does not wish to be looked at; speaks occasionally, but very unwillingly about his throat; not much thirst; swallowed some jam, which he took up upon his fingers; was shaved this morning at his own request, but felt an uneasiness and shuddering previous to each application of either brush or razor; every muscle was put upon the stretch to prevent it.

From $\frac{3}{4}$ vj. to $\frac{3}{4}$ i. of ointment rubbed in, and forty grains of calomel taken in jam, without producing a paroxysm. During the night having complained of dyspnæa, an attempt was made by Dr. O'Neil to apply some Ol. Camphor. to the larynx, but it immediately produced a spasmodic attack.

Tried to apply a saturated solution of Nit. Argenti on a piece of lint to the other side of the larynx, which produced immediately a difficulty of breathing. The powder was then sprinkled on it from the lobe of the ear to the

Cricoid cartilage, and even this produced a hurry in the breathing for three or four respirations, which, however, soon went off.

Gave him fifteen drops of the solution of Morphine on a piece of sugar, which he took in his hand, (keeping however his head turned away,) and put into his mouth. This he chewed very slowly, but in the act of deglutition, when it appeared to reach the upper part of the larynx a paroxysm was produced; in an hour, five drops more were given in the same manner, which produced another, but slight paroxysm, and he said it "went down easier."

To continue five drops every hour, increasing the dose in three hours to six, and in three more to seven; to repeat the calomel and friction. If thirsty, to have a bowl of water placed above the bed out of sight, with a cord passing down from it into his mouth.

The Morphine after this was continued regularly, and appeared to give some relief, but he would not allow the friction to be persevered in.

In a few hours he became thirsty, and the plan recommended was tried, but owing to some mismanagement the water did not flow. He then insisted on having a bowl of milk brought, and placed so that he could reach it, without seeing the fluid; in this way, using a sponge to convey it to his mouth, he was able to let his fingers come in contact with the milk, without feeling any spasmodic affection.

A restlessness soon came on, when he omitted the sponge, using his fingers alone, which he dipped into the milk, and

thus conveyed a few drops, observing, that when the liquid was placed directly on his tongue, no paroxysm was produced; but whenever it touched the lips or gums, one immediately occurred.

After some time a slight shock was produced, whenever his fingers touched the milk, notwithstanding he took two or three sips, when a sensation of choaking was experienced, and he requested that they would open the door. As soon as this was done, the cold air being admitted, he cried out for it to be shut, saying he could not bear it.

September 3rd: 12, noon.—After taking the Morphine he tried to compose himself to sleep, which he was unable to do, complaining that he could not steady his head, and felt a sensation as if it were dropping off. In a few minutes a very severe paroxysm came on, after which he jumped out of the bed, and was slightly delirious for the moment. The paroxysms now came on every three or four minutes.

In about three hours, he described his sensations to be "as if a lump of snow were melting away on his breast." The spasms continued longer. The slightest noise or motion in the room caused pain, which he signified by crying out. The 'rôle mourant,' accompanied by loss of voice came on, and with each paroxysm there was now opisthotonus. His gestures showed that he was still sensible; two very severe paroxysms occurred about 3 p. m., after each of which he cried loudly; but after these the voice died entirely away, and about 4 p. m. he calmly expired.

Two of Mr. Harvey's horses were bitten by his dog on

the first of June, and one on the seventh. One of those which received the injury on the first of the month became rabid since Mr. H's. death, and was shot; the other two remain in good health.

J. H. PURDON.

9th November, 1829.

CASE OF
OVARIAN DISEASE

OF A
REMARKABLE CHARACTER,

BY
W. F. MONTGOMERY, A.M. M.B. M.R.I.A.

PROFESSOR OF MIDWIFERY IN THE KING AND QUEEN'S COLLEGE OF PHYSICIANS IN IRELAND,
AND PHYSICIAN ACCOUCHEUR TO SIR PATRICK DUN'S HOSPITAL.

Read, 7th September, 1829.

MARY CLARKE, aged 45, the mother of nine children, the youngest of whom was nine years old, was admitted into Sir P. Dun's Hospital, and came under my care on the 15th of August, 1828. She complained of a tumour in the right Iliac region, which she had first perceived about seven years before; in addition to this she had slight asciites, which had commenced within the last four months. She formerly had hernia at both sides, greater at the right; the intestines, however, did not now descend, but the sac was distended by the descent into it of some of the drop-sical fluid. She said that she had been for some time annoyed by frequent discharges from the vagina of a fluid

like water, which came away in small quantities, and she had suffered occasionally from uterine haemorrhage; on examination per vagina, I found that there existed a small cauliflower excrescence of the os uteri: the urine was scanty, and the pulse weak, but not much accelerated.

The countenance had the peculiar expression of distress, which we so frequently observe in patients reduced and harassed by ailments, depending on considerable organic alteration in some internal viscus or structure, and exhibited a very unpromising appearance; this expression of the countenance, to which, I confess, I attach much weight, taken in combination with the disease of the os uteri, the tumour in the abdomen, and the ascites, which I looked on as its effect, justified, I thought, the most unfavourable prognosis; and although I determined on, and adopted the administration of diuretics and other remedies, I had but little hope of advantage from their use.

After the bowels had been freely emptied, she took a combination of calomel, digitalis, and squill in pills, and a solution of crystals of tartar, which was afterwards exchanged for decoction of broom tops. This treatment was after ten days discontinued, as the bowels appeared to be disordered by it.

On the 17th, a good deal of uneasiness and tension, with some pain in the right side and across the abdomen, were complained of, which symptoms were relieved by the application of leeches to the abdomen, and the use of the warm hip bath. Pills of calomel and squill to be taken, which in two days so disagreed, that they were omitted on the 29th. At this period a great increase had

taken place in the quantity of urine; but notwithstanding this increase of natural secretion, the effusion in the abdomen had greatly accumulated, and occasioned a most distressing sensation of tension.

I wish here to remark particularly, that the distress complained of was altogether out of proportion to the degree of distension, and in consequence, the poor patient was excessively anxious to have the fluid drawn off by tapping, before it was apparently necessary, and when the tension was not sufficient to admit of the operation; in two days more, however, the fluid had considerably increased in quantity, causing a great addition of suffering, which the patient described as affecting her chiefly at the right side, and across the lower part of the abdomen, the situation chiefly occupied by the tumour.

August, 31st.—She was tapped by Dr. Jacob at the left side, as far as possible from the tumour; and about six quarts of a clear yellow fluid were drawn off with great and instantaneous relief, both of the pain in the side, and, indeed, all the uneasiness previously complained of. I observed that as the fluid was passing through the canula, several thin membranous flakes passed with it, and on examining these afterwards, I was impressed with the idea that they were portions of ruptured hydatids.

The evacuation of the fluid, and the consequent flaccidity of the abdominal parietes, allowed a more satisfactory examination of the abdominal tumour, which could be traced down into the pelvis at the right side, and extending beyond the median line of the abdomen; the liver did not appear to be at all enlarged.

September 3rd.—Uneasiness about the bladder and perineum; relieved by leeches and a warm hip bath.

September 4th.—Four days after the operation of tapping, a reaccumulation of the fluid in the abdominal cavity was evidently taking place, and anasarca appeared in the left leg and thigh. I directed pills of blue pill, squill and opium, with draughts containing nitrous ether, and the abdomen to be well rubbed three times a day with a liniment composed of three parts linimentum ammoniæ, and one part oil of turpentine.

September 8.—In consequence of heat of skin, full pulse and some pain in the side, I had eight ounces of blood taken from the arm, which produced no relief.

September 9.—Complained of diarrhœa, to which I directed immediate attention.

The means hitherto used for the cure of the dropsy were totally inefficient, and the fluid re-collected so rapidly, that the operation of tapping was again performed on the 11th of September, at the earnest desire of the patient. The same quantity of fluid as before was drawn off, and a substance of a reddish colour, and membranogelatinous consistence escaped through the canula as on the former occasion; and, as before, the most complete relief followed the operation.

On examining the abdomen, the tumour was manifestly greatly increased in size; as well as I could judge, it was at least half as large again, as at the time of the first tapping, though the interval was only twelve days.

The question may naturally occur, what was done for the disease of the os uteri? In truth, if I paid it no

separate attention, the excrescence was very inconsiderable in size, and the quantity of watery discharge so trifling as to be of no importance; for which reasons, I deemed it advisable to direct all my attention to other circumstances.

The diarrhœa still continued unabated, notwithstanding the means used to restrain it, so that at the end of five days she was much weakened and exhausted; but the dropsical effusion did not now accumulate with so much rapidity as before.

September 17.—Ordered a grain and half of sulphate of quinine, with extract of gentian three time a day, port wine, and rice boiled in milk.

September 19.—Evidently sinking; complained of pain in the stomach and bowels, which appeared to arise from flatulence, and was completely relieved by a carminative draught containing acetum opii.

September 20.—Still lower; entreated for a repetition of the draught, which she got; was perfectly collected.

September 21.—Was unable to swallow, but spoke plainly, and was quite collected; died at 5 p. m.

EXAMINATION EIGHTEEN HOURS AFTER DEATH.—Great emaciation of the body; the left leg and thigh greatly enlarged by anasarca; on opening the abdomen the bowels were found much inflated, and immersed in a considerable quantity of a deep yellow coloured serum, similar to what had been previously evacuated by tapping; on turning over the body to get rid of this fluid, a quantity of pus, certainly not less than two pints, escaped from the abdo-

minal cavity; I remarked generally of the viscera, that very little blood remained in their vessels.

On turning aside the integuments, a very singular appearance presented itself; a tumour chiefly composed of fine membranes, dividing it into innumerable cells, which, with their fluid and transparent contents, resembled, at first sight, hydatids; the membranous septa dividing the cells were supplied with blood vessels of a considerable size running along their edges, so that the whole tumour presented a clear red colour. At its upper and left part there was a deep cleft or fissure, into which the open hand might be passed without any force, and when carried downwards, and towards the right side, it entered a round sac equal in size, and much resembling a large flat turnip; this was the right ovary which lay just under, and was filled with the same structure as the part of the tumour first brought into view.

In fact, it seemed as if the peculiar structure had at first grown in the ovary, which thereby became greatly enlarged, until at length the coat of the ovary had given way, and out of the fissure so formed, the morbid growth continued to enlarge, turning over the edges of the fissure, and covering the front and sides of the ovary in which *it had formerly been contained*, so that the tumour was in a great measure turned inside out.

This change in the state of the tumour might, I conceive, have happened in one of two ways; either by the coat of the ovary giving way to the pressure of the morbid growth within it, which seems probable, from the

circumstance of that substance having evidently continued to grow out of the fissure; or the breach in the coat or capsule of the ovary might have been produced by external violence or accident, a cause but too probably true, as I afterwards ascertained that the poor creature had been exposed to a great deal of ill-treatment from a brutal husband. The tumour was of such a size, that while its inferior extremity was in the pelvis, its superior border was as high as the ensiform cartilage, its length being twelve inches, and its breadth nine.

Some slight, but firm membranous bands connected the tumour to the neighbouring parts; these I divided, and the uterus and bladder were removed from the pelvis along with the tumour, their natural connexion being carefully preserved. On examination, the uterus itself was found enlarged to twice its ordinary size, and schirrous; the os uteri exhibited the numerous flocculent processes, which are all that remain of cauliflower excrescence after death; the left fallopian tube was healthy, but the ovary was somewhat enlarged, tuberculated on its surface, and very hard; the right fallopian tube was healthy, and the marginal process by which its fimbriated end is ordinarily connected to the remote extremity of the ovary, was attached over the surface of that body, in this case so enormously enlarged. The liver was rather smaller than usual, and perfectly healthy.

On this case and dissection I would now wish to make two or three brief observations. With regard to the tumour itself, without wishing to theorize or offer any

opinion on its peculiar nature, I believe, in the first place, that it is a form of disease not before observed, as affecting the ovary, or at least not hitherto described, as far as my research enables me to speak. I have dissected a great number of cases of ovarian disease, and have preserved specimens in my museum, of almost all the different species enumerated by authors, but to none of these does the disease in this case bear the slightest resemblance in character; another peculiarity, which I look upon as very remarkable, consists in the open state of the tumour, and its internal surface being in consequence exposed in the living body, and literally in a great degree turned inside out.

From the surface thus exposed, serum must have been abundantly poured out, and hence perhaps a cause, or at least one source of the effusion into the peritoneum, and whether the circumstance can be fairly attributed to this, or to some other more general cause, it is to be recollected, that during the period in which the effusion took place most rapidly, the tumour was found to have nearly doubled its surface.

The state of the tumour appears to me also to account for the great disproportion between the uneasiness felt, and the degree of distension existing.

It seems not so easy to account for the œdema of the thigh and leg occurring at the left side, while the tumour was at the right. A very intelligent pupil, Mr. Dwyer, who gave me his valuable assistance in the dissection, suggested that it might perhaps have been caused by the

weight of the tumour pushing the enlarged and schirrous uterus forcibly to the opposite side of the pelvis, and I agree in the probable correctness of this ingenious suggestion.

The situation of the tumour explains at once the reason why the intestine did not descend into the hernial sac.

A circumstance of much interest is the formation of such a quantity of pus, as evidence of very considerable inflammatory action having taken place, without its existence being indicated either by pain or the character of the pulse. At no period during her illness was the pain at all severe, but consisted rather in a sense of general uneasiness; and free pressure could all along be borne with little or no inconvenience; the pulse though frequently rather quick, between 90 and 100, was as often not accelerated, and always soft and feeble. Throughout the whole course of the treatment, I considered general blood-letting not only uncalled for, but absolutely inadmissible, except on the day mentioned, and then it was productive of no benefit, but the removal of the fluid from the cavity of the abdomen in both instances, produced at once complete relief, so that every part of the abdomen could be pressed and handled with the greatest freedom, without inconvenience to the patient.

This appears an interesting illustration of the fact long since noticed by Morgagni and Van Swieten, and recently so ably insisted on, and established by Dr. Ahercrombie, that abdominal inflammation may exist even in its destructive form, without its existence being indicated either by pain, or the state of the pulse.

Perhaps I ought not to omit to mention that I was much struck, as were those present at the examination, with the many points of identity in the appearances presented to us, with those usually witnessed, as the pathological results of puerperal fever.

The appearance of the tumour, and its relation to other parts, are represented in the engravings at the end of this volume: the parts themselves, exactly as they were removed from the body, are preserved in my museum.

W. F. MONTGOMERY.

5th December, 1829.

A CASE
OF ANOMALOUS LABOUR,

BY

THOMAS FERGUSON, M.D.

Read 7th December, 1829.

I am induced to lay the following rare and embarrassing case before my Medical brethren, from a conviction that recording such unusual deviations of Nature from her ordinary course, must have a beneficial tendency, in apprizing the junior practitioner of the many trying and arduous situations he may expect to be placed in, during the course of his professional career, and in some degree prepare him to discharge his duty to a confiding public with fidelity, with credit to himself, and honor to the Profession of which he is a member.

On the 19th of June, 1829, I was taken out four miles from town to see a lady who had been in strong labour from 5 o'clock the preceding evening. On my arrival at 11 a.m. I found in attendance the family Physician, and a gentleman whom I understood to be a practitioner in

midwifery; as also a midwife, who had had charge of the case from its commencement.

The report I received was, that early the preceding evening the midwife supposed the presentation to be the head and one hand, but finding the labour making little or no progress, she expressed her fears to the husband of the lady, that other aid might become necessary; on which the medical gentlemen already mentioned were summoned. I was further informed by one gentleman, that the pains continued severe through the night, with very short intervals, and that not until morning was it discovered that the *feet* were presenting; on which my assistance was sought for.

I proceeded to make an examination, and found the feet protruding almost without the os externum; the toes pointing to the perinœum; the os uteri fully dilated, and the soft parts in an advantageous state to facilitate delivery. The urinary bladder was much distended, and a profuse perspiration covered the entire body of the patient. Her mind was exceedingly agitated by alarming forebodings of painful operations, ultimate danger, &c. &c. I endeavoured to assuage the apprehensions of the lady, and also of her husband, by an assurance that the case was neither unusual nor formidable, which I hoped soon to demonstrate satisfactorily.

By desire of the Medical gentlemen I proceeded to the delivery, and having previously emptied the bladder of its contents, co-operating with the pains, I found no unusual obstacle in the progress of the labour, until the child's body was so far protruded, as to enable me to ascertain by

the pulsations of the funis, then without the os externum, that the child was alive. From this stage of the delivery I began to experience a most unusual, and to me unaccountable resistance to the further descent of the child, and notwithstanding the aid of powerful labour-pains and considerable manual exertions, I found great difficulty in advancing the body so low as to extricate and bring down the arms, the trunk still remaining so high that the hands and forearms only were without the os externum. Every subsequent effort at delivery I found to be unavailing.

On further examination, I discovered that there were twins, and to my great embarrassment ascertained that the head of a second child had entered the pelvis, while by passing my finger along the spine and neck of the child then partly delivered, I could distinctly trace its head still remaining above the brim of the pelvis. My first efforts were to endeavour to push up the head of the second child then descending, so as to allow the other head, that of the first child, to occupy it's proper place. But all my exertions proved ineffectual, owing to the powerful contractions of the uterus, which had been much facilitated in pressing the second head into the pelvis by the removal of the obstruction, which it before met in the arms of the first child; indeed it would appear that this obstruction had retarded the descent of the second head at a much earlier period of the labour.

Finding there was no possibility of extracting the poor little sufferer from his then perilous situation, and perceiving the pulsations in the funis still strong, besides

being conscious I had little to expect from the ingenuity or experience of my colleagues, I resolved in my own mind immediately to employ the perforator on the head of the second child then within my reach. But to crown my difficulties I found myself without the means, having left town without instruments. Thus situated, I informed my patient's husband of the perplexing nature of the case, and despatched one of the Medical gentlemen to a very contiguous village to procure instruments. Fortunately the mission was attended with considerable delay, and ultimately failed. The fraternity, no doubt from *the most humane motives*, refused to supply my wants.

During the time thus spent, notwithstanding all my care to preserve warmth in the child partly born, the circulation in the funis became languid, and at length extinct. Nevertheless I was agreeably consoled by the progress made in the descent of the head of the second child being so far advanced as to give reasonable hopes that Nature would prevail and accomplish her work, which she actually effected in the birth of *one living child*; (the second, in which the head presented,) which was accompanied by the expulsion of the head of the other, still-born, two hours and a half after the arms had been extracted as described above.

Before I attempt a description of this interesting process of parturition, I should premise that it was the lady's second confinement, that she appeared to possess great fortitude of mind, was remarkably well formed, and had throughout powerful uterine action. The child which

first presented, a male, was of such a size that in the beginning I had not the slightest suspicion of twins; the second, a female, was not so large.

The process of parturition was as follows. The descent of the footling was in the most favorable position for delivery, the toes pointing to the sacrum, and must have been progressing in that regular course, until interrupted by the intrusion of the second head into the pelvis, so soon as the arms and shoulders of the first had fairly cleared it's brim. *Here* then the second head must have made it's way into the pelvis; it's *right* ear to the sacrum, it's *left* to the pubes. At this time the neck of the first child occupied the left angle of the pelvis, posterior to the head of the second, the head resting on the brim of the pelvis, ready to follow the descent of it's companion; it's *left* ear turned to the pubes, the *right* to the sacrum. In the labour process the head of the male child became imbedded in the hollow of the neck of the female, it's *left* ear occupying a situation nearly approaching the right ear of the female, but a little higher up. The frontal bone of the female must have rested on the clavicle and shoulder of the male child, as was quite evident from the effects of the uterine action; for in proportion as the head of the female advanced, so did the arms and shoulders of the male clear the *os externum*.

The face of the female when entirely protruded was turned upwards, the mother then lying on the left side. At this time the male head remained within the vagina, and it was only during the violent pains, which protruded

the shoulders of the female, that the head of the male fell out on it's face in the bed. The delivery was soon completed by the natural expulsion of the secundines.

The abdomen remained much distended after delivery. The following day it became tender on pressure, and more immediately in the region of the uterus, considerable pain was complained of; but the curative means usually had recourse to on similar occasions being energetically employed, these unfavourable symptoms gradually subsided, and my patient recovered so as to be enabled to nurse her daughter.

Having thus attempted to give a minute detail of the foregoing interesting case, a perfect parallel to which I have not been able to discover in the records of midwifery,* I would again address myself more particularly to the junior members of the Profession, and most distinctly disavow any intention of offering the above case as a standard by which their practice should be regulated under every circumstance, but solely for the reasons already specified. Well am I aware that of all others, the practitioner in Midwifery must adapt his treatment to existing circumstances, as in the instance now under observation, where I am free to acknowledge, so happy a termination of the case almost exceeded my most sanguine expectations: nor, I conceive, could a more fortunate result be looked for by any rational practitioner.

* Three cases somewhat analogous, but differing widely in their peculiar circumstances, more especially in the treatment adopted and their results, may be found in the Medico Chirurgical Transactions of London, vol. 12, p. 336, to which I beg leave to refer the reader.

I need not here recapitulate the many serious, I may say melancholy consequences, which so often arise from subjecting a female to the dangers which may attend protracted and violent uterine action. Every reflecting practitioner must at once recognise the disastrous events I allude to, and will pause and reflect on the best possible means of avoiding such dangers. He will weigh well the magnitude of the precious charge to which he is appointed, estimate with judgment the capabilities of nature as well as the aid she may require, and regulate his proceedings accordingly.

To effect this, the Accoucheur should bring into the exercise of his art, a mind well stored with the *intricacies* of his profession. With humanity as his guide, he should possess a dispassionate judgment, great fortitude and promptness. Experience will mature his mind to make a just estimate and rational application of the resources of his art. These will enable him to base his practice on a sure foundation, avoiding equally rash precipitance and passive imbecility. During a period of thirty-eight years spent in active Midwifery practice, the numerous instances I have witnessed of the happy triumph of that art in cases truly formidable, afford me many a consolatory reflection. Cheering to me also in no small degree is the prospect, that in the extraordinary research and industry manifested at the present day in every department of Medical science, the Accoucheur will not only maintain his rank in his profession, but by a zealous cultivation of that branch, rescue it from the disingenuous sarcasms so

undeservedly flung against it by the ignorant and invidious, and add to it's legitimate and merited claims to rank high among the many blessings conferred by Medicine on the human race.

THOMAS FERGUSON.

Rutland-square,

December 5, 1829.

ON THE
MOTIONS AND SOUNDS OF THE HEART,

BY

D. J. CORRIGAN, M.D.

ONE OF THE PHYSICIANS OF THE SICK-POOR INSTITUTION.

Read, 4th January, 1830.

OUR knowledge of the diseases of the heart, and lungs, has advanced within these few years, with a rapidity unparalleled in the history of Medicine. For this we are indebted principally to the labours of Corvisart and Laennec. The light thrown by these writers on diseases of the heart and lungs, and the development by them of symptoms, of whose existence there was not, before their time even a suspicion, have given to the physiology of these organs an increased interest; insomuch that inquiries, which, previously might have been attended with little practical advantage, have now become absolutely necessary, and their results of the utmost consequence in enabling us to form correct diagnoses. In the physiology

of these organs, that of the heart stands foremost, its motions and sounds presenting perhaps the most remarkable phenomenon in the living body.

It long since occurred to me, that the causes assigned for the most remarkable action of the heart, its impulse against the side, were unsatisfactory, and insufficient, and that the descriptions of its movements were probably erroneous. However, as these causes and descriptions were given with the utmost confidence, and sanctioned by great names, I received them as correct, rather thinking that my doubts were without foundation, than that their accuracy could be disputed. The consequence was, that these doubts slept in my mind, until a trifling incident which occurred while making an experiment for a different purpose awakened them anew, and led to investigations, the results of which are now offered.

In works on physiology, the description of the heart's movements usually runs thus.—“ Every time that the “ ventricles contract, the whole of the heart is rapidly “ carried forward, and the point of this organ strikes the “ left side of the chest, opposite the interval of the sixth “ and seventh true ribs.”* All physiologists assume that the heart comes forward during the systole of the ventricles. It is universally admitted that during their systole, the ventricles contract in all directions, the sides coming together, and the apex of the heart approaching the base.† It was obvious therefore to all, that the simple

* Magendie's Physiology.

† Vid. Senac, Sabatier, Bichat, Richerand, Blumenbach, Meckel, Portal.

contraction of the ventricles, so far from making the heart approach the ribs, should draw it deeper into the chest, and hence, reasons were sought for, to reconcile the diminution of size, and consequent retraction, with its impulse against the side.

As the solution of this difficulty, which really belongs to Senac, though usually attributed to Hunter, is the most generally received, I shall commence by examining it.— Hunter says, “The systole and diastole of the heart “simply could not produce such an effect, nor could it “have been produced, if it had thrown the blood into a “straight tube in the direction of the axis of the left ven-“tricle, as is the case with the ventricles of fish, and “some other classes of animals, but by its throwing the “blood into a curved tube, viz. the aorta, that artery at “its curve endeavours to throw itself into a straight line “to increase its capacity, but the aorta being the fixed “point against the back, and the heart in some degree “loose or pendulous, the influence of its own action is “thrown upon itself, and it is tilted forward against the “inside of the chest.”

Before entering on the main part of his explanation, I may observe here, that Hunter’s argument founded on the construction of the heart in fishes, is of no value. The construction of their heart is very unlike that of man, and is even different in different fishes, the auricle in some being anterior to the ventricle; in others passing round or beyond it, as in the genus, *Gadus*, &c. The parietes of the auricle also are remarkably thin, the mus-

cular fibres being arranged over its internal surface, merely as an irregular net work.

Let us first consider Hunter's explanation in reference to the anatomy of the heart, and its vessels in situ. The aorta rising from the heart, takes its course first from left to right, and a little forwards, being here placed between the right auricle, the pulmonary artery and the left auricle. It continues its course, still from left to right, from below upwards, and from behind forwards, approaching the sternum, and necessarily moving away from the vertebral column. We may call this its first stage. Then changing its direction, and generally opposite to the junction of the first and second bone of the sternum, it arches itself from *right to left*, and from before backwards, until it reaches the left side of the third dorsal vertebra.* The loose extremity of the arch, or that to which the heart is attached, is on the right. If we suppose this arch to make an attempt at straightening itself, by tilting up its loose extremity, this extremity must move, not towards the left side, but away from it, and towards the right. The heart being attached to the loose extremity, it necessarily follows, that if the arch could straighten itself and take the heart with it, the heart would be carried by such straightening in the same direction, that is, away from the left side. The pulmonary artery is so weak, and its arch so very slight, that it has not been taken into account in explaining the impulse: it is therefore scarcely necessary to add that this artery takes a direction from right

* Vide Cours d' Anatomie Medicale, Tom. 3, p. 141, par Antoine Portal.

to left, and from before backwards ; and hence, did it straighten itself, would assist the aorta in propelling the heart towards the right side. So far then, Hunter's explanation is erroneous, and is totally at variance with the anatomy of the heart, and its large vessels.

Independent of these objections, his theory contains an error in physics so striking, that were it not deemed objectionable by some, to apply the laws of physics to the living body, I should have considered it unnecessary to have pointed out its anatomical errors.

Hunter says, that, the aorta being curved, will, after each impulse, endeavour to straighten itself. This might be true were the aorta before each impulse, empty, and the inner wall of the arch so much doubled upon itself, as to make an angular projection into its cavity, which is, however, never the case. The artery being always full, the reaction which takes place must be in the direction of the axis of the orifice of the aorta, no matter how the artery afterwards curves.

In the observations on Hunter's error, I may include a similar mistake into which a celebrated physiologist of the present day, Dr. Bostock, has fallen. He is offering in replying to Mr. Alderson, whose paper I shall presently notice, what he appears to think a triumphant proof, that the direction of the mouth of the aorta is of no consequence in guiding the reaction of that vessel, and that therefore no matter how that orifice points, the artery will endeavour to straighten itself.

“ I conceive,” (says Doctor Bostock,) “ that if a curved elastic tube that is fixed at one end, and hanging loose

"at the other, be suddenly injected, the injection will tend to elevate the loose end, *whatever may be the direction of the curve with respect to its orifice.*"* In the first place, there is no analogy whatever between a curved tube with an open end and the aorta. Secondly, in such an experiment as Doctor Bostock describes, the loose end will be moved, not by the impulse of the fluid injected through the tube, or by its reaction on the curve, but by the reaction generated at the orifice where the fluid quits the tube. The direction of the discharging orifice with regard to the curve, instead of being immaterial to the effect produced on the curve, as Doctor Bostock asserts, is in fact the regulating influence, that determines which way the loose extremity of the tube shall move, and what shall be the effect produced upon the curve, whether increased or diminished.

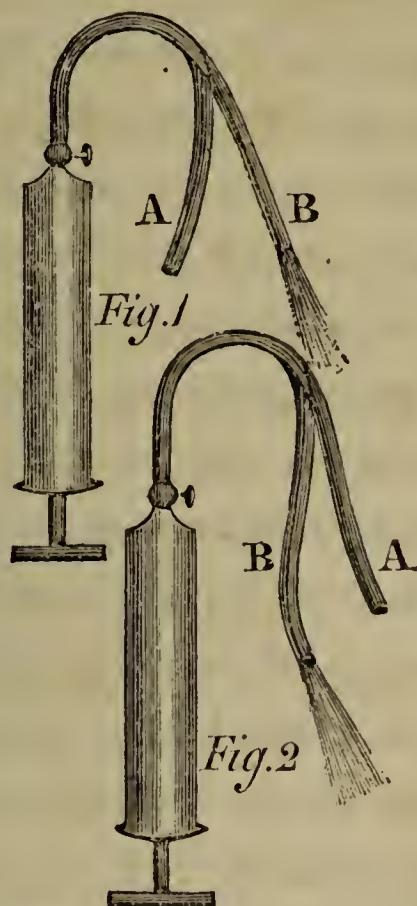
I shall here, as on every occasion where possible, instead of referring to abstract laws from physics, have recourse to direct and simple experiment. To demonstrate the fallacy of the assertion made by Bostock, Magendie, Hunter, Senac, and indeed by all physiologists who have supported their opinion, take the ordinary stomach pump, with a long curved elastic tube attached. Inject water forcibly through it, and you will find, that when the orifice is curved in towards the pump, the extremity of the tube will move outwards, or the tube will tend to straighten itself. If the orifice be pointed outwards or away from the pump, the loose end will move inwards, or the curve

* Bostock's Physiology, vol. 3, p. 398.

will be increased. When the orifice is turned to the right or the left side, the tube will move in the opposite direction. These movements of the tube prove to demonstration, that the straightening of the curve, when it does take place, instead of being independent of, is altogether governed by, the direction of the discharging office. The accompanying diagram will explain my meaning better than words.

Fig. 1. A represents the tube with its orifice turned inwards. B, the position which the same tube assumes from the reaction generated at the discharging orifice.—Fig. 2. represents the experiment reversed.—A, the tube with its extremity or discharging orifice turned outwards. B, the same tube driven in, or the curve increased by the reaction of the fluid rushing out. The principle embraced by Hunter, that a bent tube like the aorta, will be straightened by the action of the fluid impelled through it, and the illustration offered by Doctor Bostock, in support of this principle, are therefore both erroneous; their application, of course, must be equally so.

There is yet another objection to Hunter's explanation of the impulse against the side, even admitting it to be caused by the straightening of the arterial tube. Were



his explanation true, the impulse against the side should not be felt until *after* the arterial pulse; for, the arteries being always full, and fluids being almost incompressible, the pulse must be felt in the arterial branches, the moment the ventricle begins its contraction, while the heart should not strike the side, until a moment after the pulse is felt, when the ventricle has driven its contained blood into the aorta, and has dilated its arch. Now no one I believe will venture to assert, that the impulse against the side is felt after the impulse in the wrist.

Senac, whom I have already mentioned, as laying down the straightening of the Aortic arch as the main cause of the heart's impulse, argues thus.—“A fact known to “every one will make this cause evident. A bent tube “endeavours to straighten itself, when it is suddenly “filled. Thus, when we place the ham of one leg on the “knee of the other, the foot is put into motion with each “beat of the heart. This arises from the artery which “is bent under the hollow of the knee, making an attempt “to straighten itself each time that blood is sent into it. “This effort gives to the foot and leg an oscillation, simi-“lar to that of a pendulum.”* There are two errors in this paragraph, first, the illustration of the curved tube; this is the one already pointed out in Doctor Bostock's work. Secondly, the error of supposing, that in the experiment described, the foot is raised by the artery's attempt to straighten itself. As Doctor Bostock has followed Hunter in his error, so has Magendie followed

* *Traité de la structure du Cœur, de son Action, &c. par M. Senac.*

Senac. Magendie says, "An experiment has been made "which consists in crossing the legs, and placing upon "one knee the ham of the other, with a weight of fifty- "five pounds appended to the extremity of the foot.— "This considerable weight, though placed at the extre- "mity of such a long lever, is raised at each contrac- "tion of the ventricles, on account of the tendency to "straighten the accidental curvature of the popliteal "artery, produced when the legs are crossed in this man- "ner."* I have already stated, and proved by a very simple experiment, that the impulse of fluid passing through a curved tube will not tend to straighten it. Place one leg across, with the ham on the knee of the other. The foot, it is true, is raised, and with considerable force, at each beat of the heart; it is not however from the artery endeavouring to straighten itself, as Senac and Magendie assert, but from that part of the artery which is compressed by the weight of the one leg against the knee of the other, dilating at each beat, and projecting the leg before it, the foot of course moving in a corresponding arc. For, allow the leg to hang at right angles, but in place of permitting the popliteal or tibial artery to be pressed on, let the mid-thigh rest on the edge of a chair, or over some support as a book, &c. there will be no motion in the foot at each beat, yet the artery is more curved than it was before.

* Magendie's Physiology. Magendie seems to think that the length of the leg is a measure of the length of the lever. This is not the case. The length of the lever is but the length from the knee to the point of suspension of the weight, supposing the two to be in the same plane.

A little reflection will show the falsity of this theory of Senac and Magendie. Were it true, our limbs which are never straight, should be ever vibrating, in fact, we should be living pendulums. Magendie gives fifty-five pounds at the extremity of the long arm of a lever, as too low a measure of the power exerted by the popliteal artery in straightening itself. Multiply this to find the real power, and then let us imagine the sub-maxillary arteries which are very much curved, beating against our jaws with a force equal to a multiple of fifty-five pounds. What strange spectacles we should be, did the tubes through which our blood runs, tend to straighten themselves, and with such a power. The moment that our muscles relaxed, our limbs would be struck into right lines from our bodies. When from a revolution on its axis, the eye curved the ophthalmic artery, that moment the eye would be shot like a pistol bullet from its socket. Our bodies when reclining, or in postures of ease, in place of presenting gentle curves, would then describe but right lines and angles. I have said enough, I trust, to prove that the explanation commonly known in these countries as Hunter's, but in reality belonging to Senac, is totally untenable.

Another cause has been assigned for the heart's impulse.* The left auricle is placed between the spine and the ventricle; and it is said that at the moment when the ventricle contracts the auricle is dilating, and not being able from its situation to expand towards the spine, it presses in its dilatation the heart against the side. To this

* Vid. Richerand, Blumenbach, Meckel, Portal, Senac.

it is only necessary to reply, that the slow filling of the auricle from the pulmonic veins, never could produce the rapid impulse with which the heart strikes the side.— Senac, with whom the idea originated, saw the difficulty, which later physiologists who borrowed from him seem to have overlooked, and attempted to solve it. He says,— “We shall find this cause,” (the cause of the sudden impulse,) “in the reflux which carries the blood of the ventricles into the auricles; by this reflux the auricle is suddenly swelled. The reflux alone would not however be sufficient to produce the sudden distension, but the blood which comes from the ventricle joined to that, which comes from the pulmonary veins, is able to cause in the auricle sufficient dilatation, quick and sudden enough to produce the beating of the heart.”* Senac himself placed no great confidence in this explanation, for he calls the reflux a subsidiary cause to the former. In reply to this, first, such a reflux is totally unproved; secondly, the flow of blood through the pulmonary veins being comparatively slow, and the action of the ventricle extremely rapid and instantaneous on that of the auricle, the consequence would be, were Senac’s supposition of the reflux correct, that the auricle should be filled in the greater part by the reflux of blood from the ventricle; and then every individual would present the symptoms of diseased valves. If the quantity of blood which flowed back were small, it could not produce the sudden “gonflement” spoken of by Senac. If it were large, the lungs

* Senac. *Traité de la structure du Cœur, &c.* p. 357.

would be oppressed. The valves however will permit no such reflux, or if at the moment they are closing, any blood pass through, the quantity must be so trifling, that it can neither raise the heart by the sudden distension of the auricle, nor produce any effect by the reaction generated at the moment of its passing out. There is however another objection, which applies equally to this, as to all the opinions advanced on the cause of the heart's impulse, namely, that the assumption of all Physiologists, that the Heart strikes the side during the contraction of the ventricles, is erroneous; but of this, more hereafter.

It is scarcely necessary to allude to the opinions of physiologists before Senac, some of whom supposed the impulse against the side, to be caused by the fibres of the heart twisting in such a manner at the moment of their contraction, as to turn up its point, while others, unable to account for the heart's impulse in any other way, positively asserted, that while the sides of the ventricles contracted and came closer together, the point of the heart was elongated, and thus struck the side. To the first of these opinions it may be replied, that to cause such a twisting, the spiral muscular fibres of the heart should contract unequally; for, when spiral fibres placed around a point, act equally in drawing it up, that point must move in a right line. Did the impulse depend on a twisting to one side, we should have the heart beating sometimes in one direction, sometimes in another, according as the fibres on the one side or the other might be the stronger. Again, the left ventricle is by much stronger than the

right; were there unequal contractions, the greater should be to the left or posteriorly, and the tilting of the heart, in the majority of cases, not against the left side, and anteriorly, but backwards. On the second of these explanations, that the point of the heart is lengthened out, while its sides are narrowed, there is now not a second opinion; it being universally admitted that there is no such lengthening, but that the ventricles contract in every direction. Indeed, a moment's inspection of a living heart in action, is sufficient to remove any doubt on this subject.

It now only remains to take notice of an explanation of the heart's impulse offered by Mr. Alderson of Cambridge College,* an explanation certainly deserving of much praise for its ingenuity, but evincing a more intimate knowledge of physics than of anatomy or physiology. He assumes as true, what all physiologists assert, that the impulse against the side takes place during the contraction of the ventricles. He founds his explanation on the general law of Nature, that "action and reaction are equal and contrary," illustrating its application to the instance before him, by a reference to Barker's centrifugal mill. In this machine, (a plate of which is in almost every work on natural philosophy,) the action of the fluid being taken off one side of the horizontal arm, by making an opening in it through which the water jets, the reaction exerted on the side opposite the orifice, impels the arm round in a direction away from the orifice. To apply this, he supposes the ventricle full and in active contrac-

* Vid. Quarterly Journal of Science, &c. vol. xviii. p. 223.

tion, a plug closing for a moment the mouth of the aorta. He then supposes this plug to be suddenly removed, when the fluid rushing out from the ventricle brings into play, as in Barker's mill, a reaction, which exerted on the surface of the ventricle opposite the mouth of the aorta, impels the ventricle in a direction away from the orifice of that artery and against the side. This explanation is highly ingenious, but can never apply to the heart in the living body. For, in order that it might, it would be necessary that the aorta should be, as Mr. Alderson supposes, at one moment obstinately closed, and at the next, an empty tube, presenting scarcely any obstacle to the egress of the blood from the ventricle. In the latter state, however, the aorta never exists. It is never empty for a moment, but on the contrary, being always full, there never can be the uncountervailed reaction Mr. Alderson supposes, exerted on the opposing inner surface of the ventricle. There is another objection to his explanation; admitting even that such a reaction does take place, it must produce its effect precisely in the axis of the mouth of the vessel. Now, as seen by the anatomy of the heart already given, the axis of the mouth of the aorta is downwards, backwards, and to the left; the recoil of the ventricle should therefore be in the same direction, which would plunge the heart deeper into the chest on each contraction, instead of bringing it forward against the side. Again, did the heart recoil as he supposes, it could only do so by dragging down the arch of the aorta with it, for it could not separate itself from its connexion with the

artery. We should then have all the arteries rising from the arch, the carotid and subclavian descending into the chest with each pulsation. It need scarcely be said that this does not occur. Mr. Alderson's explanation is, for these reasons, erroneous. With its errors, it is however still by far the most ingenious attempt that has ever been made, to reconcile the coming forward of the ventricle with its contraction.

I have now, I believe, gone through all the explanations which have been offered to account for the beat of the heart against the side, and shown, I hope satisfactorily, that all the causes assigned, would either produce an effect diametrically opposite, or are totally insufficient to accomplish it.

All physiologists assert, that it is during the contraction of the ventricles, the heart strikes the side. The insufficiency of all explanations, and the errors of most, led me to think that there was probably some mistake in the premises on which all have argued. The first step therefore was, to ascertain whether the position universally assumed, was correct, namely, that it is during the systole of the ventricles the heart strikes the side.

The arteries being always full, and fluids being nearly incompressible, it follows that an impulse from the ventricle must be felt in the arterial branches, at the very instant of time of the contraction of the ventricle; that therefore, the pulse indicates precisely the moment of that contraction. The arterial pulse then being exactly synchronous with the contraction of the ventricle, and the striking of the heart against the side being, according to

all physiologists, a consequence of that contraction, it follows that the arterial pulse should be felt a moment before the heart strikes the side, or that at the farthest, the impulse against the side, and the pulse, should be synchronous. Is it so? Or are they even synchronous? They are not. I know that my readers will be startled by this assertion, for all physiologists assert that they are; but let the reader before he discredits my assertion that they are *not*, but that the impulse of the heart against the side is anterior to the arterial pulse, place the index finger of his right hand on the point where his own heart beats most strongly, at the same time keeping the thumb or forefinger of the left upon the radial artery of his right hand. When his heart is beating slowly and forcibly, he will perceive distinctly that the first tap is against the ribs, the second from the pulse.

The *second* tap indicates the precise moment of the contraction of the ventricle; the *first*, the heart's impulse against the side: the contraction of the ventricle is consequently posterior to the impulse of the heart. An effect cannot precede its cause; therefore, the contraction of the ventricle which follows, can not produce the heart's impulse, which has gone before. This experiment on the side and wrist was conclusive in my mind, that the contraction of the ventricles could not be the cause of the heart's impulse, and convinced me that the statements given by all physiologists of the heart's movements were erroneous, and that the position assumed by all, namely, that the heart strikes the side when the ventricles are con-

tracting, was false. Some other cause of the heart's impulse was therefore to be sought.

The failure of all attempts to account for the impulse of the heart against the side, on the supposition of its being produced by the contraction of the ventricles, and the result of the trial described on the side and wrist, led me to conceive, that the heart's impulse against the side, and the dull sound accompanying it, attributed by Laennec to the contraction of the ventricles, were produced by the rush of blood into the ventricles, and were dependant not on the systole of the ventricles but on that of the auricles; not synchronous with the contraction of the ventricles, but with their dilatation.

A pathological fact occurred to me about the same time, which strengthened me in this opinion. Doctor Hunt had a patient with intense "bruit de soufflet" in the heart, which case he kindly handed over to me. The "bruit de soufflet" was most distinctly anterior to the pulse. For reasons, which I have already stated in another place, I had no doubt that this sound was produced by the rush of blood through a narrow opening into a wider cavity.* In this case, it was not produced by the rush through a narrow aortic opening, for, it was not synchronous with the pulse. It could therefore only be caused by the rush into the ventricle; and occurring synchronous with the impulse and and anterior to the pulse, it was a confirmation of the opinion that the heart's impulse was caused by the contraction of the auricle. On the patient's

* Vid. 'Inquiry' by me into the causes of "bruit de soufflet," and "Fremitissement cataire." Lancet, 1829, vol. ii. p. 1.

death, a post-mortem examination was had. The auriculo-ventricular communication was very much narrowed; the other openings sound. The parts are in my possession.

Fearing lest I might have been too much carried away by my own opinions, I mentioned them, and the arguments upon which they were founded, to my friends, Doctor John C. Ferguson and Doctor Hunt, and proposed to them to follow up the inquiry with me. They assented, and I hope I may say, we have conducted it with as much anxiety to arrive at the truth, and as little prejudice, as ever a similar investigation was prosecuted with. Indeed, whatever of prejudice there might have been, was against my views, for it was hard to believe that all physiologists, even those most celebrated for their accuracy, were up to this moment in error. This made us repeat the experiment on the side and wrist frequently and cautiously upon ourselves and others; and the result we now confidently lay before the Profession as a well ascertained fact, that the impulse of the heart against the side is invariably *anterior* to the impulse in the arteries.

For the sake of clearness, we shall first state the experiments made—secondly, the facts observed and conclusions arrived at—and thirdly, we shall test the new views here offered of the heart's movements and sounds by pathology, examine how far they are in accordance with it, and how far they mutually explain each other.

Our first object was to examine the heart in the living animal. A rabbit was selected, and before proceeding with the experiment, the stethoscope was applied. Both sounds of the heart could be distinctly heard. The right

side of the chest was opened, the mediastinum being left uninjured. Respiration went freely on, little blood was lost; and we obtained a view of the heart in action, far superior to what we could have anticipated. The animal lived in this state for about twenty minutes, sufficient time for accurate examination. Immediately after the operation, and when the heart was first brought into view, its motions were very rapid and tumultuous, but in a few moments they became less frequent, and more regular, and the movements of the different parts plainly distinguishable: first, the contraction of the auricles—second, the contraction of the ventricles—then, the pause. At each contraction of the auricles the heart came forward, the ventricles being dilated in every direction, and driven downwards and forwards; at each contraction of the ventricles the heart retired into the chest. The contractions of auricles and ventricles were quick; but it is impossible to describe the rapidity with which the contraction of the ventricle followed that of the auricle. When the heart was beating violently, their succession was so rapid, that the eye could scarcely distinguish between the two contractions.

To insure accuracy in our observations, a red vessel or some line beyond the heart's apex was chosen for the eye to rest on, and the motion of the organ towards and from it, was marked. Each time that the auricle contracted the heart came forward; each time that the ventricle contracted, the organ retired.

Authors describe the point of the heart as being tilted up, struck against the ribs; we could observe no such

motion. The heart first applied itself to the parietes of the chest, by a small surface almost midway between the base and the apex which quickly increased in extent.

The stethoscope was now placed on the left side of the sternum, and while one of us listened to the sounds of the heart's action, and tapped with his finger at each impulse and dull sound, the others marked by the sight the contractions of the heart. The tap indicating the impulse and dull sound, came after each pause, and synchronous with the contractions of the auricles, the ventricles being at the same instant dilated and propelled forward, the appendices of the auricles at the same time retiring.— Another now took the stethoscope; the experiment was conducted in the same way, and with a similar result. These experiments were repeated six times on rabbits, and again, on a larger animal, and invariably with the same results.

In warm blooded animals, the motions of the heart are rapid, but particularly under pain; and hence it was difficult, even for the eye, when the chest was first opened, to follow its movements. The heart of a reptile, on account of its slow movements, and the little comparative sensibility of the animal, is free from this inconvenience. The heart of a frog, even under operation, beats only between fifty and sixty in the minute, so that the movement of each part can be most distinctly seen.

Doctor Bostock, describing the motion of the heart in a cold blooded animal, uses the following words.—“ For a “ short space of time the heart lies at rest, and suffers “ itself to be distended with blood, then it is suddenly

“seen to rise up on its basis, to shorten its fibres, and to
“expel its contents.”* We may observe first, that there
is in this description, a contradiction both to his own
assertions in another part of his work, and a refutation of
his theory of the heart’s impulse. Doctor Bostock makes
in this description, the rising up of the heart anterior to
the contraction of the ventricles. He says in another
place, “I may without impropriety assert, that the beat-
“ing is felt *not* at the instant when the ventricle *begins to*
“*contract*, but when the contraction has produced its
“effect in filling the arch of the aorta.” In the first
quotation the heart, according to Doctor Bostock, *first*
rises up, that is, beats, *then* expels its contents; in the
second passage the heart *first* fills the arch of the aorta,
that is, expels its contents, and then beats. He asserts
with Senac and Hunter, that the filling of the arch of the
aorta by the contraction of the ventricle, is the cause of
the heart’s rising and giving an impulse; yet in the descrip-
tion just quoted, he makes the rising of the heart anterior
to the filling of the arch. Doctor Bostock’s description
is, however, not only at variance with his own assertions
and theory, but it is even quite erroneous in point of fact.
This, the inspection of the heart in the living frog clearly
showed. Having removed the inferior portion of the
sternum, and thus brought the heart clearly into view,
the following phenomena were observed. The heart did
not suffer itself to be distended with blood, as Doctor
Bostock states. The blood was thrown into it by the
auricle contracting with great energy. It did not rise up

* Bostock’s Physiology, vol. i. p. 346.

on its basis; but was dilated and driven downwards and forwards by the blood expelled from the auricle: and finally, as the ventricle contracted, the heart retired from the surface, being deepest in the chest, at the moment when the contraction was at its utmost.

The heart of a frog is very large, compared with the size of the animal; its movements are very slow, and its parietes although strong, are almost transparent. These circumstances, but above all, the transparency of the walls of the organ give the greatest certainty to observations on the actions of the heart in this animal; the presence or absence of blood in the ventricle being marked, not alone by the increase or decrease of size, but also in the most beautiful manner by the change of colour. The heart is quite pale when the ventricle is contracted or empty, a deep rich purple, when it is dilated or full of blood. This change of colour was an additional test of the accuracy of our observations, which we did not possess in warm blooded animals. When the auricle was distended it came fully into view; when it contracted, it did so with great energy, retiring quickly from our sight. At the same instant the ventricle swelling, being distended with blood (as shown by its sudden change from extreme paleness to a rich purple colour,) was impelled with some force against the finger. The contraction of the ventricle followed quickly upon its dilatation. It diminished itself in every direction, bringing its sides together, and its apex towards the base, and as it contracted, retired until its perfect paleness proved, that it had expelled all its blood; the heart at the moment, when the contraction was at its

height, being deepest in the chest. Repetitions of this experiment confirmed our observations in every particular.

We consider the examination of the heart of the frog, as quite conclusive. Could a shadow of doubt have remained on our minds after the examination of the warm blooded animals, it would have been completely removed by the inspection of the heart of this reptile; the change of colour presenting an infallible test of dilatation and contraction.

Having now gone through the detail of the experiments on the living heart, we present the facts ascertained.

1^{mo}. The auricles contract first.

2^{ndo}. The ventricles, second.

3^{tio}. Then the pause or state of rest.

4^{to}. The contraction of the ventricles is rapid, and follows quick as can be conceived after that of the auricles.

5^{to}. The contraction of the auricles is comparatively slow.

6^{to}. The heart strikes the side, or, gives its impulse, when the auricles contract.

7^{mo}. The heart retires from the side when the ventricles contract.

8^{vo}. The beat of the heart is produced, not by a tilting up of the point of the organ as hitherto described, but by its swelling and coming against the ribs, in consequence of the impulse given by the rush of blood from the auricle.

All physiologists have fallen into the mistake of supposing, that the impulse of the heart and the impulse of the artery are synchronous, and hence, have founded on false

premises their conclusion, that it is when the ventricles contract the heart comes forward.

The inspection of the living heart in our experiments, showed us how easily such a mistake might be made. The impulse against the side is not felt until the heart has been almost fully dilated ; of course, until the auricle has nearly *finished* its contraction. The impulse in the arteries, on the contrary, from their being always full, is felt at the very instant that the ventricle *begins* to contract. But the commencement of the contraction of the ventricles, follows instantaneously upon the termination of that of the auricles. Hence, the beat of the artery which is felt at the commencement of the contraction of the ventricles, must closely follow the beat of the heart, which has occurred only at the termination of the preceding contraction, that of the auricles ; and close as the two contractions follow each other, the impulses must follow still closer, from their being caused at opposite periods of the two contractions on which they depend ; the one being produced at the termination of the first contraction, the other at the very commencement of the second. The more frequent the action of the heart, the less of course is the lapse of time between them appreciable ; and hence, naturally arose the mistake of supposing them to be synchronous.

We next turn to the sounds produced by the heart's action. In our review of the opinions entertained on them, we have only to go back to Laennec, their discoverer.

He says,—“ At the moment the artery strikes the

“ finger, the ear is gently raised by a movement of the
“ heart synchronous with that of the artery, and accom-
“ panied by a sound rather dull, yet distinct.” *Their*
“ *synchronism does not allow us to doubt*, that the pheno-
“ menon is owing to the contraction of the ventricles.—
“ Immediately after, and without any interval, a sound
“ louder and analogous to that of a valve, which is raised,
“ or the lapping of a dog, or a whip, announces the con-
“ traction of the auricles.”*

The errors in this paragraph, namely, the assertion that the impulse of the heart and artery are synchronous, and the false conclusions arising from that error, have been already pointed out.

Laennec asserts, that the first sound long and dull, is owing to the contraction of the ventricles. His proof is that this sound accompanies the impulse, which he, in common with all physiologists, assumes to be synchronous with the pulse, and produced by the contraction of the ventricles. If his assertion be true, that the sound is owing to the contraction of the ventricles, it ought to commence only with the pulse, because the pulse marks the exact moment of their contraction. If on the other hand, the view put forward in the commencement of these pages, that the dull sound and impulse are produced by the rush of blood into the ventricle, be correct, it as obviously follows, that the sound should be heard anterior to the pulse. Hence the time at which the long sound commences, is an *experimentum crucis* by which to test the two theories.

* *Traité de l' Auscultation Médiate*, vol. ii. p. 404.

To ascertain the relation which the sound bears to the pulse, we selected from very extensive dispensary practice, those patients, who happened to have remarkably slow pulses. We also examined repeatedly and carefully the heart's action in the horse; which animal offered peculiar facilities for our purpose. The heart, when in health, beats only forty in the minute, and the sounds are distinct. Though perfectly satisfied in our own minds, with the result of these observations, still we looked for further evidence. Each of us selected, from among his friends not in the profession, a person on whose delicacy of ear and accuracy of observation he could rely. Of these, one was a gentleman who has been blind for some years, a man, however, of the highest mental powers. It is needless to remark, that, from this peculiar circumstance, loss of sight, his other senses have become extremely acute. The persons thus selected were carefully kept in ignorance of either our own views, or those entertained by others. After they had to their satisfaction distinguished the two sounds and the impulse, through the stethoscope, they were instructed to lay a hand on the pulse, and note the order in which each phenomenon seemed to them to occur.

The opinions expressed by these persons were as follow.—“ The impulse and dull sound came before the pulse. The dull sound had terminated when the pulse struck the finger. The short sound came exceedingly quick after the pulse. The first sound was long; the second short, not half the length of the first; and there was a short interval between the two sounds.” These observations, made by our non-medical friends, we hold

to be peculiarly valuable ; they are those of persons unprejudiced, made without a knowledge of any theory : they are the records of facts, the persons who recounted them not knowing for what purpose they were to be used. On the dull sound and impulse preceding the striking of the pulse, there was not amongst them even a hesitation ; all declared at once that the impulse and dull sound preceded the pulse, and by a well marked interval. On the termination of the dull sound there was a slight difference, one asserting it to have ended when the pulse struck the finger ; another supposing it and the pulse to finish together. When the heart beat quickly, the dull sound and pulse seemed to terminate together ; but in the horse, and in slowly beating hearts, the pulse terminated the long sound, as if with a blow, or, as the tap of a finger terminates the vibrations of a glass.

Let us now examine Laennec's explanation of the first sound. He says, it is owing to the contraction of the ventricles : his proof is, that it comes with the impulse, and that the impulse and pulse being synchronous, there cannot be a doubt that the long sound is owing to the cause stated. Now, the impulse against the side is not synchronous with, but precedes, the pulse. The pulse, for reasons already stated, and, indeed, on Laennec's own acknowledgment, marks the instant of the contraction of the ventricles. The dull sound comes before the pulse, therefore, before the contraction of the ventricles. It necessarily follows, that the contraction of the ventricles cannot produce it ; for, as already observed of the impulse, an effect cannot precede its cause ; therefore, the contrac-

tion of the ventricle which follows, cannot produce the sound which has gone before.

It is singular, that to an observer so accurate as Laennec, it never occurred, that if this sound were caused by the contraction of the ventricles, the sound and the contraction of the ventricles should be of equal duration. Now, every one who has opened the living animal, knows that the ventricles contract with extreme rapidity ; or even without such an inspection, the pulse indicates the velocity with which the ventricles act. Were Laennec's opinion correct, the sound should occupy only the time of the pulse, the duration of which is not appreciable. Instead of being equally brief, the sound is long, or to use his own phrase, "prolongè." Laennec's explanation of this sound is therefore erroneous and insufficient; erroneous, because the sound commences before the alleged cause,—insufficient, because it occupies a space of time far longer than that occupied by the contraction which he supposes to produce it.

Doctor Barry says, the first sound is caused by the dilatation of the auricles. He, with all others, has adopted the erroneous position, that the impulse against the side marks the contraction of the ventricles, and of course the dilatation of the auricles. But the contrary being the fact, his explanation, with all similar, falls, for the auricles are in active contraction at the very moment he supposes them to be dilating.

We have put our theory of the long sound to the experimentum crucis already detailed; we shall hereafter see

whether it bears the test of pathology better than Laennec's.

A case very similar to the one related in the commencement of this paper, has lately occurred to us, strikingly illustrative of the correctness of our views. The signs of diseased heart are marked with an uncommon degree of clearness, namely, *increased sound and impulse* of the right side of the heart—diminished impulse of the left, where in place of first sound, there is long and intense bruit de soufflet, then pulse. Our diagnosis was narrowing of the left auriculo-ventricular orifice, with hypertrophy of the right auricle. The effect of the narrowing is, to convert the long dull sound produced by the rush of blood through the full sized opening, into bruit de soufflet.* The opening being narrowed, the left ventricle is not filled as quickly as it otherwise would be; hence the bruit de soufflet is long, and the antecedence of the sound to the pulse is marked by an interval more distinct, than we have met on any other occasion. How can we explain the stethoscopic signs of this case on any of the theories of the heart's action and sound hitherto offered? In no way that we are aware of; they totally contradict Laennec in the order which he gives to the contraction of ventricle and auricle; for, were the order assigned by him the true one, the “bruit de soufflet” should come after the pulse, when the mitral valves are diseased—should accompany the pulse when the aortic valves are affected. It does neither; it precedes the pulse, taking the place of the natural dull sound. Were the dull sound produced by

* Vid. note, p. 167.

the contraction of the ventricle, we ought to have it in this case accompanying the pulse; but it is altogether absent; it cannot therefore be produced by the action of the ventricle. The pulse, in this case, terminates the "bruit de soufflet," just as in the healthy heart it terminates the natural dull sound.*

In addition to what we have advanced in support of our opinion, that the dull sound which accompanies the impulse is caused by the rush of blood into the ventricle, we may mention, that the sound can be imitated closely, by driving water into the ventricles of a dead heart, the heart being kept under water in order to exclude air, and thus prevent deception.

We have now given what we conceive to be satisfactory proof, that the dull sound is produced by the rush of blood from the auricles into the ventricles, and that the opinion hitherto entertained of its being caused by the contraction of the ventricles, is erroneous. On argu-

* After these pages had gone to the publisher, the subject of this case died. As it occurred while we were following up the inquiry, and was a case which would probably confirm or disprove the opinions advanced, it engaged much attention. Doctor Osborne, to whom the circumstances connected with it, were mentioned, kindly received the patient into Sir P. Dun's hospital, and was present at the autopsy. The pericardium contained about ten or twelve ounces of clear serum. The heart was very large, and deeply injected with blood. The ventricles were nearly healthy; the right rather *thinner* than natural. The right auriculo-ventricular orifice was of full size and healthy: the left diminished to about double the diameter of a goose quill; the edges of the opening on the auricular side, presenting a bony spine surrounding the orifice. The great bulk of the heart arose from the size of the auricles. The right auricle was much dilated, and its *musculi pectinati* resembled the *columnæ carneæ* of a ventricle in

ments drawn from pathology we have not dwelt ; these we shall defer to the last part of this paper. Before leaving the subject of the first sound, it may be necessary to remark, that in many persons whom we have examined, the termination of the sound and the pulse seem synchronous. Here the reader must keep in mind that the pulse is felt at the moment the ventricle begins its contraction, and that this contraction is quick as thought after that of the auricle,—so immediate, that it was asserted by an eminent physiologist, that the two contractions were simultaneous. The consequence of this rapidity is, that when the heart is beating quickly, the pulse strikes the finger, while the sound yet lingers on the ear. There is moreover to be taken into account in such cases, the difference between the two sensations of sound and touch. The first travels slowly, and will hang on the ear after the cause which produced it, has ceased to act. The second comes and goes with electric rapidity. In persons whose hearts beat

size and strength. The left auricle was still more enlarged, forming at its upper part a pouch almost double the size of the ventricle, and also possessing parietes very much thickened.

It may be objected that in our diagnosis we said nothing of hypertrophy of the left auricle. We were well aware that with the narrowed orifice such a state of the auricle should almost necessarily exist ; but we did not mention it, because there was no direct sign. That there was not in the left side of the heart impulse corresponding with the degree of hypertrophy of the auricle, was dependant on two causes ; the narrowing of the opening into the ventricle, and the still further obstruction to the flow of blood arising from a growth of polypi within the auricle. These grew from the valves on the margin of the opening ; and one of them hung directly over it, about an inch long, and of the thickness of the little finger. It was in the process of softening, containing puriform fluid in its centre.

slowly, and in the horse, it can however be distinctly perceived, that the sound of which we are treating, terminates at the moment when the pulse rises.

The investigation of the cause of the second or short sound presented to us much greater difficulties, than that of the first or dull sound.

Before examining opinions as to its cause, we may observe here, that there is in Laennec's comparison of this sound, a want of accuracy. He compares it to the sound "of a valve which is raised, of a whip, or of a dog which is lapping."* A dog when he laps, makes two sounds. With a valve there are also two sounds; any one can assure himself of this by listening, with his ear to the side of a pump. When the piston is driven down, the valve in the piston is raised, and the water rushes through the hollow piston, producing a long sound. If the piston be now suddenly arrested in its descent, and drawn up, the superincumbent weight of water immediately throws the valve back to its birth, and there is a short sudden click produced. Laennec, when comparing the short sound to the noise of a valve, seems not to have been aware of this difference, for he describes in one place the sound as analogous to the "clicking of a valve of a pair of bellows;" in another place, as analogous to the sound of a valve "qui se releve," which is being raised. In Doctor Forbes's edition of Laennec, the expression "qui se re-

* "Immediately et sans aucun intervalle, un bruit plus eclatant, et analogue a celui d' une soupape qui se releve, d'un fouet, ou d' un chien qui lape, annonce la contraction des oreillettes." *Traité de l' auscultation, &c.* vol. 2, p. 405.

leve" is not translated. The sound is exceedingly like to that of a valve returned quickly upon its birth, but not at all like to that of a valve "which is being raised."

Laennec says, that the second sound is caused by the contraction of the auricles; the contraction of the auricles is, however, first. His explanation, therefore, is erroneous. Mr. Turner, who pointed out Laennec's error, offers an explanation of this sound. He attributes it to the falling back of the heart upon the pericardium, after it has been carried forward by each contraction. But in order that the heart in falling back, may produce such a noise, it is necessary that there should be some space between it, and the object against which it strikes. Now, that space must either contain a fluid or be a vacuum;—fluid, we know, does not exist. A vacuum there cannot be. Again, were it dependant on such a cause as Mr. Turner asserts, it would be for ever varying, sometimes present, sometimes absent, according as the position of the body, a full stomach, or any accidental cause might make the falling back greater or less. It is however the most constant, the least varying of all the phenomena presented by the heart's action; showing that it must depend on some cause almost always present, and in the healthy heart, at least, scarcely ever varying in degree. For these reasons, Mr. Turner's explanation of this sound will not suffice.

Doctor Williams offers another explanation of this sound. He supposes that during the systole of the ventricle, the musculi papillares, which hold the valves, are stretched to their full extent, that as soon as the ventricle ceases its

contraction these muscles act with energy, and bring the valves with such a sudden slap against the sides of the ventricle, as to produce the sound. This we cannot admit. There is no power but that possessed by those muscles, to prevent the valves being rolled back; yet at the moment such a power is required, Dr. Williams makes them quite inactive, or allows them merely a passive power, such as would be possessed by a dead muscle. Now, the passive power of muscular fibre, we know, to be almost nothing; and it would be quite insufficient to support the valves against the powerful action of the ventricles. He supposes, that immediately at the termination of the systole of the ventricle, the *musculi papillares* contract with force, and bring the valves with a sudden slap against the sides of the ventricle, thus producing the sound in question. What object would be gained by such an action? None that we are aware of, and Nature does not expend muscular action in vain. Doctor Williams indeed supposes, that this retraction of the valves may be of use in drawing blood into the ventricle; but he is here at issue with himself, for he asserts, in a previous paper, that the ventricles have no sucking power. Again, when the ventricle has just finished its systole, its sides must be in almost perfect contact with the two valves which lie between them: if at the moment when the systole has terminated, the *musculi papillares* contract, they can do nothing more than keep the valves where they are, and consequently can produce no sound. There is still another objection to his theory, more weighty than any of those yet adduced. It is the relative anatomy of the

valves, the musculi papillares, and the sides of the ventricles. A moment's inspection will convince any one that the contraction of the musculi papillares, will draw the valves, not with a slap against the sides of the ventricle as he supposes, and which would be necessary to produce sound, but in a line parallel to, or even away from their sides.

Doctor Barry says, the second sound is produced by the dilatation of the ventricles.* He assumes as granted, what is very far from being proved, that there is an active dilating power in the ventricles. This is disputed, and indeed the best experiment on this subject, Doctor Williams's, which we have repeated more than once, for our own satisfaction, goes far to disprove their possessing such a power.

The sound, too, comes so quickly upon the pulse, that we can scarcely suppose two opposite actions to succeed each other so rapidly in the same muscle. Doctor Barry's theory, moreover, would allow the heart no rest, for were an active dilatation immediately to succeed the contraction, there would be no pause in its action, and no muscle can continue to perform its functions without rest. We saw the insufficiency of all the causes hitherto assigned for this second sound. We first examined the auricles, to ascertain whether it might be produced by them. It could not be produced by their contraction, for, their contraction is synchronous with the dull sound, anterior to the

* We may observe here, in corroboration of the facts stated by us, that Doctor Barry says, he has observed the first sound not to correspond always with the pulse.

pulse, and of course anterior to the short sound. We turned then to their expansion, on the supposition, that the currents of blood from the veins coming together suddenly in their cavities immediately after their contraction, might produce it: but this we gave up, for the flow of blood from the veins into the auricles is slow, and can produce no short sound, such as the one under consideration. We have already noted the extreme regularity of the second sound; but were there any sound produced by the flow of blood into the auricle, it ought to be very much influenced by posture, and should be for ever varying, as the circulation might be hurried or retarded. We turned now to the valves, first to the auriculo-ventricular, on the supposition that at the moment the ventricle contracted, it might drive these together, the sudden slap producing the sound. But here again we were met by two objections; we could not produce the sound by making the valves act in the dead heart; and were it caused by them, they ought to make it in the dead, as in the living heart. And, secondly, before the ventricle can send blood into the aorta, it must close these valves. The sound, if depending on their closing, should come before the pulse: it however does not, but immediately after it. These valves can therefore in no way, either by coming together, or by opening, as on Williams's theory, produce the sound: neither can the aortic valves. Their action in coming together is merely from the reacting elasticity of the aorta; they touch by a very small surface; and they are exceedingly delicate in the smaller animals, and in the foetus, in which, nevertheless, the second sound is dis-

tinctly heard. For these reasons, it appeared to us impossible that they could produce this sound. We were so often disappointed in our attempts to discover the cause of this sound, that we had almost given it up in despair, when having ascertained that it is imitated most exactly by the falling back of a valve upon its birth, and that the sound is precisely what may be produced by the simple impulsion (as in the case of the valve) of two surfaces meeting, we turned to the heart to discover if there were among its actions any thing similar.

The ventricle contracts powerfully, and, as already said, with the rapidity of lightning, not slowly, as Laennec strangely asserts. The impulsion of the internal surfaces against each other, must from such a contraction, be sudden and strong, and we might *a priori* expect, it should resemble strongly that produced by the flapping of a valve; or what is the same thing, the striking together of two non vibrating substances. The supposition that the short sound was caused by the impulsion against each other of the sides of the ventricle, required experiment to support it, and to institute a satisfactory one was not easy. At length the following was adopted. Into the pulmonary artery of a heart taken from the body, a gum elastic tube was fastened; the two *venæ cavæ* were tied, after all the air had been carefully expelled from the cavities of the heart, and all were immersed in water. The loose extremity of the tube was attached to a small pump, which, as well as the gum elastic tube, was filled with water. Our object was, to bring the sides of the ventricles together with an impulsion as quick as its own action could. After

we had distended the ventricle, by pressing down the piston of the pump, we produced a vacuum by suddenly checking and drawing the piston quickly back. The influence of this action was of course extended to the ventricle. The weight of the external water and atmosphere, immediately acted upon the outer surface of the ventricle, expelling the fluid from it along the tube, and bringing its sides together, precisely as if by an inherent power in themselves. Each time that they thus came suddenly together, the impulsion produced a short sound, imitating with the greatest nicety, the second sound of the heart. We could make the sound, weaker or stronger, according to the force with which we made the sides approach each other. We repeated the experiment on the left ventricle with the same result. It is obviously a matter of indifference whether the power that brings the two sides together be, as in this experiment on the dead heart, an external power, or whether it be, as in the living, its own inherent contraction.

Let us now examine with regard to the time of its occurrence, this cause assigned for the second or short sound. It is heard, as already stated, immediately after the pulse; indeed, so instantaneously, that one of the individuals before alluded to, hesitated, whether he should not pronounce it synchronous with the pulse. In a slow beating heart, and in the horse, that it follows the pulse is easily ascertained. Taking it for granted, that the cause assigned by us is the true one, its coming thus after the pulse, and with the greatest rapidity, is precisely what we should a priori expect. Its shortness too, and the pecu-

liar sensation it conveys, is, what would be produced by the impulsion of surfaces, whose very meeting, while it creates the sound, prevents a prolongation of it.

It may be objected to the causes assigned by us, that the ventricle does not bring its sides together; we are aware that is asserted by Senac, and other physiologists, that it never empties itself. This, like many of the positions we have received on the authority of others, is without proof. It would not be fair to form an opinion on this subject, from the state in which we find the ventricles after death, for the circulation in the last moments of life is always irregular. Were any however to be founded on their state, it would certainly be in favour of their emptying themselves completely, for we generally find the left ventricle empty. If it were not able, as Senac asserts, to bring its sides together, there should remain some blood in it, no matter how the animal was killed. The right ventricle, 'tis true, almost always contains blood, but this depends on a cause, which it would be foreign to the purpose of this paper to go into.

We know that the action of the ventricle is sudden, quick and powerful. What is there to arrest that action, so as to prevent its sides meeting? Not the last remaining portion of blood supposed to be contained. In the frog, in which, as we have already stated, the heart takes its colour from the presence or absence of blood, the ventricle becomes at the end of each contraction perfectly pale, showing in the most satisfactory manner that it brings its sides together, expelling all the blood from between them. When we see the ventricles of cold blooded animals con-

tract thus, we surely must admit, that the ventricles of the warm blooded, which act with much greater energy, possess like power. We cannot suppose, that at the moment before the sides come together, the ventricle stops its contraction by any inherent power. There must be some obstacle to check it at the instant when its systole is at its height, and that obstacle, we believe, can be found alone in the meeting of its sides. The assumption that the ventricle does not bring its sides together at the termination of each contraction is totally unsupported by any proof, is contrary to reason, and directly contradicted by experiment.

It is, however, not necessary for producing the sound in question, that every drop of blood in the ventricle should be expelled. A small portion may remain in the interstices of the columnæ carneæ, or protected by the musculi papillares; but this will not interfere with the production of the sound. In our experiment already described, with the dead heart, it is not probable that in drawing back the piston, we removed the fluid so perfectly as to bring the inner surfaces of the ventricle in contact through its whole extent, and yet the sound was heard, and loud. Indeed as far as we could judge, we should be inclined to say that it was not produced near the apex, but by the comparatively smooth surface of the ventricle near the base.

We shall now consider the pathology of the heart in reference to the new views here offered of its action. Our pathology must however be limited, because we have

not as yet a sufficient number of cases of heart disease accurately noted in reference to our opinions.

“ The most frequent and most severe diseases of the heart, are, dilatation of the ventricles—thickening of their walls—and the union of these two affections.”

Let us first consider the signs of dilatation of the ventricles—the passive aneurism of Corvisart.—“ The extent through which the beatings of the heart are heard, is in direct proportion to the weakness and thinness of their parietes—the degree of clearness of the (first) sound and its extent, are the measure of the dilatation. We measure the degree of dilatation by the extent of space through which the heart is heard.”*

Loudness of the first sound is then the pathognomonic sign of dilatation. With Laennec, on this point, every observer of heart disease agrees. On our view of the heart’s action, the sign is easily explained. This sound, we have said, is produced by the rushing of blood into the ventricles, it will therefore be loud in proportion to the size of the receiving cavity. How are we to account for the loudness of the sound on Laennec’s explanation? The sound, he says, is caused by the action of the ventricles; but were it so, it ought to be less in proportion as the ventricle is weak, yet the very opposite is the fact.

The impulse is absent, or lessened, in passive aneurism. This can be equally well explained on either view; on Laennec’s, by supposing the impulse to be in proportion to the strength of the ventricle; on ours, by the rush of

* *Traité de l’ Auscultation Médiate par Laennec*, vol. ii. pp. 391, 510, 512.

blood which causes the impulse being lost in a larger cavity, over a larger surface.

In simple hypertrophy of the ventricles the sound is dull: when carried to an extreme degree, there is a shock without sound, and the second sound (mislabeled by Laennec the sound of the auricles,) becomes, according to him, very dull and scarcely heard. On Laennec's explanation the sound should be *loud*, for the thicker their parietes, the louder should be the sound produced by their action. On our view the signs are, as we should a priori expect them. The thick fleshy walls of the hypertrophied ventricles will not transmit the sound easily; hence it becomes "un son étouffé," a smothered sound. If the increased growth of the sides proceed to diminish the cavity much, the sound will be altogether lost, from the smallness of the space and the thickness of the walls. There will then be, as Laennec says, an impulse without sound, "un choc sans bruit." It may be said that solids conduct sound better than other media, that therefore the sound should be, were our view correct, more easily transmitted by thickened ventricles. This is true however only of some solids, and a worse conductor of sound than a thick mass of muscle could be scarcely imagined; as is well known to every one who has listened to the respiratory murmur, through the pectoral muscles of a robust man.

The second sound is dull in hypertrophy, for a reason already advanced, to account for the dulness of the first sound: the thick fleshy walls of the ventricles will not transmit it equally with thin parietes. Moreover, the sides

of an hypertrophied ventricle do not probably come together equally well as those of the healthy ventricle, but as we know nothing certain on this point, we shall not attach any weight to it. On the subject of impulse in simple hypertrophy, we shall refer what we have to say, to the head of active aneurism.

We now come to dilatation of the ventricles with hypertrophy, the active aneurism of Corvisart. The signs laid down are, strong impulse and loud sound.* Laennec says, a strong impulse is the diagnostic sign of hypertrophy, and that he has never seen an exception, that the loudness of the sound is a measure of the dilatation ; that the signs of active aneurism are composed of those of hypertrophy and dilatation, in short, that the unvarying signs are strong impulse, and loud, but dull sound.

If we admit these signs to be correctly stated, there will be in one of them an objection to our explanation of the heart's action. The loudness of sound is in accordance with, and in support of our opinions, depending, as we assert, on the size of the cavity into which the blood rushes. But the strong impulse, if it were invariably present, would be an objection to our view, for unless the auricle were at the same time hypertrophied, our explanation would not account for it. Laennec says, strong impulse invariably accompanies hypertrophy of the ventricle. To this we cannot assent. We have seen cases of hypertrophy to the most extreme degree, without impulse even equal to the natural, and some even without any.

* Les contractions des ventricles donnent a la fois une impulsion forte, et un bruit assez marqué. Laennec, p. 514, vol. ii.

In one instance this was particularly striking. It might perhaps be supposed that having taken up a particular view, we were likely to see cases with prejudiced eyes. But no supposition of this kind can apply in the case alluded to. The notes of it were taken in February 1829, twelve months since, when we had not the most distant idea of the views now offered. The case was a very obscure one, and hence, the particulars were taken with accuracy. Among them is the following remark.—“The “impulse of the heart could not be at all felt by the “hand, and but very indistinctly perceived with the “stethoscope.” The subject of this note died in the following April. He had been ill three years. The heart was dilated, and excessively hypertrophied. Another case occurred in June last. The note of it says, “Impulse of “the heart increased but not much, and felt against the “middle of the fourth rib.” This patient died in the same month. The heart was perhaps the largest we ever saw; its walls enormously thickened, and its cavity increased. Its action too, was energetic, for the note of the case says, the pulse was “full and strong;” yet the impulse was not remarkable. Other cases have more lately occurred, of a great degree of hypertrophy without impulse. The fact is undoubted, that hypertrophy with dilatation, and to an extreme degree, does exist without impulse. Bertin, though he does not say so, yet evidently admits that hypertrophy may exist without impulse. He says,—“The cylinder renders the impulse perceptible, “even when it escapes detection by the hand; I have “discovered by means of it, hypertrophies, which through

" any other, I should not even have been able to suspect."* We have however, even Laennec himself indirectly admitting the same. He remarks, "Percussion and the application of the hand over the heart, become, in many cases, of no avail."† Were the strength of impulse to depend on the degree of hypertrophy of the ventricle, it would be impossible to conceive that in hypertrophied heart, as Bertin and Laennec admit, the impulse may be so weak as to escape detection by the hand.

Our opinion is, that when increased impulse occurs with hypertrophied ventricle, it is incidental; and for this opinion, we hope, we have given sufficient proof in the cases which occurred to us, and in the admission of Bertin and even of Laennec.

We assert moreover, that the contraction of the auricle is the active force in producing the impulse. We shall bring in support of this, a case from Bertin, so satisfactory, as to convince the most sceptical, giving those parts of it which bear upon our subject, in his own words. The case is headed, "*Hypertrophy of the left auricle, of the interventricular septum, and of the columnæ carneæ of the right ventricle with dilatation of the left cavities, narrowing, or rather, disappearance of the cavity of the right ventricle, and ramolissement of the walls of the left, a little thickened towards the point.*"‡ After having given a lengthened detail of the usual symptoms of heart disease, with which it is unnecessary to trouble the reader, he

* Bertin. *Traité des maladies du cœur*, p. 355.

† *Traité de l' auscultation mediate*, vol. ii. p. 502.

‡ *Traité des maladies du cœur, &c.* p. 334.

adds, "his pulse was full, free, and *vibrating*, (vibrant.)" "*The beatings of the heart were felt with violence over almost the whole chest.*"—"Autopsy; the pericardium was very adherent to the heart, particularly on its anterior surface. The heart was very large, and rounded, presenting no appearance of its apex. *The left auricle was enormously dilated, and its walls had acquired a thickness of three lines.* The left ventricle had acquired a similar dilatation, and its cavity was so much increased, that it contained eight ounces of fluid; but *its walls were not thickened, unless at the inferior part and point.* They were soft and easily torn: the interventricular septum was more than an inch thick through its whole extent. Its tissue possessed no more consistence than the other parts of the walls. The right auricle was natural, but the right ventricle was *wasted*, and possessed, at most, not more than one-fifth of the volume of the left. The columnæ carneæ equalled the size of a writing pen, and were adherent to one another, occupying the cavity of the ventricle, so that during life, the blood could only filter through their meshes. The mitral valve was cartilaginous on its edges; the aortic valves were similarly affected in their middle."

This case we attach value to. It is a detail of symptoms, and the pathology connected with them, coming from one, who, if not opposed to, was at least perfectly ignorant of the opinions now advanced, from one who entertained, in common with all the pathologists of the day, the belief that increased impulse depends upon hypertrophy of the ventricles. This case furnishes us with all

we want, to prove the truth of our views, and to contradict the opinions generally received. The right ventricle was wasted, and all but obliterated, its sides glued together; the increased impulse did not therefore depend on it. The left ventricle was not thickened, save in a very small part, and it, as well as the interventricular septum, was entirely in a state of "ramolissement, soft, and easily torn;" consequently, "the beatings of the heart," that "*were felt with violence over nearly the whole of the chest,*" were not produced by it. We have then in this case, proof to demonstration, that increased impulse may be present without hypertrophy. We have on the other hand, in the cases already noted, and in the admission of Laennec and Bertin, equally conclusive evidence that there may be hypertrophy even to an extreme degree, without increased impulse: the inevitable conclusion is, that the two are not necessarily connected as cause and effect, and that when they meet in the one case, their simultaneous occurrence is purely accidental. The case just quoted is, however, of value to us in another and more interesting point of view. It proves not alone that increased impulse is not dependent on hypertrophy, but it equally clearly demonstrates, that it is caused, as we assert, by the action of the auricle. In this case, from the state of the heart, it was absolutely impossible to attribute the violent beatings of the heart, to any cause but the contraction of the auricle. They could not, for the reasons already stated, be caused by the action of the ventricles. We are forced, in order to account for them, to turn to the auricles, and here we find in the views

offered by us,* an easy solution of the otherwise inexplicable sign; for one of the auricles had acquired a thickness of three lines, equal to the strength of an ordinary ventricle; and accordingly, in this case with ventricles excessively weakened, and the worst adapted for causing an impulse, "the beatings of the heart were felt with violence over the entire chest."

It may be said, are there not many cases related of hypertrophied and dilated ventricles with increased impulse, and without hypertrophied auricles? We are well aware of this, but we must take leave to doubt the accuracy of these reports. Nor is this to be wondered at, when we remember the material errors already pointed out in so accurate an observer as Laennec; when we reflect that the important part, which the auricles play in the actions of the heart, has never been pointed out until the present view—when we find that the auricles have engaged so little attention that Bertin and Laennec have not said one word by which to guide observers to judge of their hypertrophy, while they have been very minute on the relative proportions of the parietes of the ventricles. These writers have laid it down as an established fact, that increased impulse is invariably caused by hypertro-

* We cannot omit inserting here the description given by Laennec of the action of the heart, in cases of great hypertrophy of the ventricles.—"In hypertrophy carried to a very high degree, the rhythm of the heart is singularly altered. The contraction of the ventricles becomes extremely long: there is at first only a motion obscure and deep, but which gradually increases, raises the ear, and at last produces the impulse," vol. ii. p. 411. When this is read with our views, how beautiful, how accurate a description it is, of the auricles labouring to impel the mass of an enlarged heart before them.

phy of the ventricles. Their statement has been taken as true, and hence it has naturally arisen, that while attention was eagerly turned to the state of the ventricles, that of the auricles has been passed over as of little consequence.

An auricle may be hypertrophied, and considerably, without even attracting attention, particularly from those who trust implicitly to the semeiology of Laennec. We have before us, while writing, specimens of hypertrophied auricle depending on narrowed valvular communication, which, were it not that the cause of the hypertrophy drew our attention to them, we might most easily have passed over. The natural thickness of the auricle is little, and when beside a much thickened ventricle, the cavity may possess considerable increase of its walls, and yet be set down as natural. That such a mistake may be made, and easily, Laennec himself states. He says,—
“Attention, and the habit of frequently examining these organs, are necessary to enable us to judge accurately of the hypertrophy of the auricles; for as their walls are naturally very thin, an increase of double is not perceivable, unless by an experienced eye.”* Now, we know that muscles increasing in growth, increase in a greater ratio in strength. If the muscular parietes of an auricle be of double their natural thickness, (an increase, according to Laennec, easily passed over) they will give an impulse of more than double strength, and so in proportion to every degree of their hypertrophy. Hence may arise the mistake, a very natural one under the circum-

* *Traité de l' auscultation, &c.* p. 524.

stances, that when hypertrophied auricles and ventricles occur together, a very general combination, that the hypertrophy of the ventricles, on which so much stress has been laid should be noted particularly, while the other should have little attention bestowed on it, or should even remain undetected.

It is not our purpose to go through the whole range of the semeiology of heart diseases; we hope we have gone through enough to explain our principles, and to enable every one to test them for himself.

Pathological facts, as far as we know, are, with one exception, in our favour. That this exception is however not valid, we have brought forward, we think, most convincing proofs, and we must therefore demand in future, now that we have called attention to their importance, a more rigid pathology of the auricles.

We must draw this paper to a close, and it may perhaps be well, briefly to sum up the positions which we advocate.

OF THE MOTIONS OF THE HEART.

1^{mo}. The contraction of the auricles (comparatively slow,) takes place first.

2^{ndo}. The contraction of the ventricles extremely rapid, follows quick as thought upon that of the auricles.

3^{tio}. The pause.

4^{to}. The impulse of the heart against the side does not take place during the contraction of the ventricles, but in their dilatations.

5^{to}. The impulse against the side is caused, not by the contraction of the ventricles, but by the contraction of the auricles, being dependant on the force with which the auricles send their blood into the ventricles.

6^{to}. When the auricles contract, the ventricles are dilated, and the heart comes forward.

7^{mo}. When the ventricles contract, the heart retires.

OF THE SOUNDS.

1^{mo}. The first sound is caused by the rush of blood from the auricles into the dilating ventricles; not by the contraction of the ventricles as hitherto taught.

2^{rdo}. The second sound is caused, not by the contraction of the auricles, the falling back of the heart, or the action of the valves, but by the striking together of the internal surfaces of the ventricle.

OF THE RHYTHM.

1^{mo}. The impulse and long sound come first, and are synchronous.

2^{ndo}. The pulse.

3^{tio}. The second or short sound.

We may observe, it necessarily follows from these positions, that we must differ from Laennec as to the times occupied by the different actions of the heart, and its pause. He says, the ventricles contract slowly—on this there cannot be a second opinion; they contract most rapidly. He says, in round numbers, of the time taken

up by a single action of all the parts of the heart, and the pause after that action, a half is occupied by the contraction of the ventricles—a fourth by the contraction of the auricles,—and a fourth by absolute rest. This would give but twelve hours rest in the twenty-four to the ventricles, which have the greatest labour to perform, that of driving the blood through the lungs and the entire system, and eighteen hours rest to the auricles, whose labour is comparatively trifling. On our view, speaking as Laennec does, in round numbers, one half of the time is occupied by the contraction of the auricles—one fourth by that of the ventricles,—and a fourth by rest. This will reverse the order, and give to the ventricles which require it, eighteen hours rest in the twenty-four, and to the auricles, having less labour to perform, only twelve.

We now offer the views embraced by us to the profession. On the motions of the heart, we stand at issue with all the physiologists of the day. On the modes in which the sounds of the heart are produced, and the actions which those sounds indicate we are equally at variance with Laennec, and all who have made mediate auscultation their study. If our views and opinions be found to be correct, the whole pathology and semeiology of heart disease must undergo revision.

We differ from great men of the past and present day, and our subject has obliged us to criticise closely the labours of others. It is perhaps, under these circumstances to be expected, that there may be strong prejudices against us.

We have been, throughout our whole inquiry, instigated

solely by a desire to arrive at the truth: we have stated, we hope clearly, the facts, the experiments, and reasonings, which have led us to our conclusions, and we have now only to solicit for them, a fair and impartial investigation.

J. C. FERGUSON.

P. HUNT.

OSSIFICATION
OF THE
MITRAL AND AORTIC VALVES,
WITH
INDURATION OF THE TRICUSPID, HYPERTROPHY AND DILATATION OF
BOTH AURICLES, VENTRICLES SOUND,

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Read, 4th January, 1830.

ELLEN PRINTER, aged 25, was visited on September 19, 1828. She was of a delicate constitution, and stated that she had often miscarried. She complained of dyspnœa, and frequent palpitations, sometimes so violent as to shake the whole bed; remained always in the sitting posture; enjoyed no sleep; had a hard cough, with sometimes a bloody expectoration; and the feet were œdematos. The contractions of the ventricles were accompanied with a loud and distinct bruit de soufflet, which, on account of emaciation, was heard all over the anterior part of the chest. On the following day she was much relieved from

the dyspnœa, had enjoyed some sleep, and was covered with perspiration, chiefly about the head and upper part of the body. She had taken gentle laxatives with tincture of digitalis. This latter medicine was continued, but with very little benefit; for on the next day the palpitation was very violent, but the noise of the heart not so loud. Its impulse was observed to be strongest between the third and fourth cartilages of the left side. Percussion gave but a dull sound in the region of the heart. The right arm was affected with severe pain from the shoulder to the tips of the fingers, and its colour had been livid in the earlier part of the day. She stated that four months ago she had been affected with paralysis of the right side.

On the 24th she enjoyed a considerable degree of ease; the pulse was much slower, and the impulse of the heart very considerable along the whole sternum. The sound of the ventricles was heard all over the anterior part of the chest. The heart's action was very irregular; the stroke of the ventricles very long, that of the auricles could hardly be distinguished, and there followed an intermission which was equal in duration to both. On the 25th the pulse was 100, and the beating of the heart less violent, but very irregular. First, there were two or three strokes with a long intermission between them, and then followed an equal or a greater number in rapid succession. The expectoration was this day less bloody, and the respiration was observed to be puerile under the left clavicle. The edge of the liver was felt for the first time below the navel. From this day until the second of October, she continued nearly in the same state, deriving

little benefit from the use of digitalis, which was exhibited under various forms. At the latter period the legs were swelled up to the knees; the impulse of the heart was less; but the noise loud and peculiar. The contractions of the ventricles were accompanied with a noise which had some resemblance to the rolling of a cart. The pronunciation of the word *thūrlă* will convey some idea of the sound, which accompanied their slow contractions. The sibilous rattle was heard wherever the respiration was audible. The urine was scanty, and the sputa less coloured with blood. She complained of a severe pain in the small of the back, which was aggravated by speaking or motion.

On the 8th of October she was a good deal worse; the anasarcaous swelling of the legs undiminished, orthopnœa, palpitation and haemoptysis, with paleness of the countenance. On the 10th and 11th the respiration was heard only at the upper part of the chest. She was obliged to sit up in bed constantly, and could hardly speak; but the functions of the brain continued undisturbed. She died at 9 o'clock p. m. with extraordinary efforts of the respiratory muscles.

For the following accurate description of the morbid appearances, I am indebted to Dr. HENRY, who, together with Surgeon CONNOLLY, assisted at the examination after death.

EXAMINATION OF THE BODY OF ELLEN PRINTER, Oct. 13, 1828.—The extremities were anasarcaous. The liver was much enlarged and very hard; its external surface appearing as if minute grains of sand were imbedded in

it. These grains were closely set, and so numerous as to cover almost the whole surface of the liver. The right lung adhered to the pleura costalis. There was no water in either pleura. The pericardium was distended by a large quantity (a quart or more) of a greenish yellow transparent fluid, with a very few flakes of soft lymph floating through it. The heart, especially the auricular portion, was distended by a quantity of clotted blood. The mitral valves were so much ossified, that the passage from the left auricle into the left ventricle was reduced to a mere chink, of a form somewhat semicircular, large enough to admit the blade of an ordinary scalpel; but not so large as to admit the handle. This form and size of the auriculo-ventricular opening was produced by the complete ossification of the opposing valves, which stood up from their bases, (on which they were quite immovable,) and projected forwards towards each other so as almost to meet, and in part of their length actually to meet each other. The edges of the valves were very irregular and nodulated, and so much thickened, that the passage between them from the auricle into the ventricle was of considerable length. There was a good deal of ossification under the lining membrane of the parts in the immediate vicinity of the valves. The columnæ carneæ and chordæ teudineæ were thicker and stronger than usual. The auricle was thickened in its parietes, presenting, in some places, a muscular layer of a quarter of an inch in thickness; its cavity was so much enlarged, as nearly to admit a closed hand. The ventricle was in the natural state. On looking from the aorta towards the

ventricle, the aortic valves were seen standing up, so as nearly to close the passage, but still leaving an opening between their edges, large enough to admit a small pea. When the point of the little finger was applied to the opening on the side of the ventricles, and a slight pressure used, the valves yielded so as to allow the point of the finger to enter the aorta, and the opening to increase to about twice its former magnitude; the valves at the same time closely embracing, and pressing upon the finger with an elastic force. On withdrawing the finger the valves returned immediately by their elasticity to their former situation, and the opening was reduced to its former size. The ossification of these valves was very imperfect, but they were considerably thickened. There were two or three minute points of ossification in the aorta, at about the distance of an inch from the heart. The tricuspid valves were also thickened and imperfectly ossified, and stood up a little from the sides of the ventricle. The right ventricle, and the valves of the pulmonary artery were quite healthy; the right auricle thickened and enlarged, but not so much as the left. There was no appearance of unusual vascularity, or of false membrane on any part of the heart. The lungs were not cut into; externally they appeared sound.

JAMES HENRY.

This case derives particular interest, from the degree of ossification in the valves of the heart. Bertin says, that in the course of twenty years' practice, he never witnessed more than four cases of indurated tricuspid

valves, and remarks that he has, in general, seen it to accompany a direct communication between the right and left cavities. In the present case, however, such a communication did not exist. From the presence of the bellows sound, and the irregularity of the heart's action, we were led to expect a contraction of its orifices, in which we were not disappointed. My own attention was particularly directed to the mitral and aortic valves, as the probable seat of that lesion; but I was not guided to that conclusion by observing, that the bruit de soufflet was louder at one part of the chest than at another. Within certain limits it appeared to be equally loud on both sides of the sternum; and besides, the heart's action was so tumultuous and disorderly, that it was very difficult to analyze it, so as to refer each phenomenon to its proper source: a difficulty which was increased by the position of that organ in the pericardium, to be hereafter noticed. The bellows sound is considered by Bertin to be the pathognomonic sign of contracted orifices, and, with some restrictions, the same is admitted by Andral and Laennec. The correctness of this opinion I had myself verified by some experience. It is also known that the left side of the heart is the usual seat of ossification. It was on these circumstances, combined with the observation that the irregularities of the pulse in the radial artery, corresponded with those in the heart's action, that my diagnosis was founded. Others who have a more delicate ear, and more practice in stethoscopic observation, might have been able to distinguish the existence of contractions in all the orifices affected by them. Not, however, by means of the

bellows sound; for that accompanied only the systole of the ventricles. In the present case, the contractions of the auriculo-ventricular openings could be detected only by means of the active aneurism of the auricles; which, perhaps, was indicated by the strong pulsations of the heart at the upper part of the sternum, and even so with little certainty, as that state of the heart might depend upon other causes.

In the case we have related, the sound of the heart's contractions was not that of a bellows, but sometimes resembled the noise of a cart, and sometimes that of churning. The fact appears to be, that it undergoes various modifications, according to the degree in which the circulation is obstructed. In a case of indurated, but not ossified mitral valves, of which I had an examination last winter, it accurately resembled the sound of rasping. In the same case the heart was also enormously enlarged, and the aorta, at its origin, had an unusually small diameter. With respect to the noise of churning, it might be supposed to arise, in the present case, from the fluid contained in the pericardium; but as there was no escape of air from that cavity when opened, the explanation is inadmissible.

Several attempts have been made to account for the *bruit de soufflet*, but the cause of it still remains in considerable obscurity. Bertin supposes it to depend on the increased friction of the blood against the sides of the arteries, or the contracted orifices of the heart, and refers the *fremissement cataire* to the same cause. Andral thinks that increased velocity of the blood through the

heart, or some portion of an artery, is a necessary condition, without, however, pretending to explain in what manner it contributes to produce it. Perhaps it will be admitted that simple friction does not afford an adequate solution of the phenomenon; for otherwise it might exist in tubes devoid of life, as in those made of metal or gum elastic, or in dead arteries. Those who maintain the contrary opinion, are bound to show by experiment, that it may be produced under the latter circumstances; or, failing to do so, they must acknowledge that the vitality of the tube is a condition necessary for its existence, and that, therefore, it cannot be the result of mere mechanical friction. It may be even necessary to go a step farther, and to admit that it is connected with a certain peculiarity of structure; else why is it not observed in veins, as well as in the heart and arteries? It is not easy to reconcile the opinion of those who ascribe it to local contractions of the arteries, with cases in which it has been heard of equal intensity along the whole tract of the aorta and carotids. If we suppose the ordinary sound of the heart to be the result of its muscular action, all the other sounds, including those of the cart and of churning, as in the present case, may be accounted for by viewing them as modifications of the natural sound produced by certain morbid conditions of the central organ of the circulation. To this view of the subject, which is that adopted by Laennec, the present case is rather favourable, as the passage of the blood through the auriculo-ventricular openings was unaccompanied with the bellows sound, although they were narrower than any other. It

also receives support from the observation of cases, presenting a very distinct *bruit de soufflet*, without the existence of any apparent organic injury of the heart.

In the case before us, the pulsations of the heart were observed to be strongest between the third and fourth cartilages. This fact was accounted for by its position in the pericardium. The latter was so distended with fluid, and the size of the heart so little increased in proportion, that it floated freely in its cavity; accordingly, it lay with its longitudinal axis nearly at right angles to the spinal column, and thus its strongest impulse was perceived in the space already mentioned. But this position of the heart is not the result exclusively of a large collection of fluid in the pericardium: it has often been observed to arise from a great enlargement of it, and cannot, therefore, be always regarded as a symptom of hydropericardium.

The paralysis of the right arm, which happened early in the case before us, is not easily accounted for. Several examples of this affection, and even of apoplexy are on record, as the consequences of hypertrophy of the left ventricle. In the present case, however, the parietes of the left ventricle were rather thinner than natural, the aortic opening narrower, and there was not a vestige of the paralytic affection at the period of my first visit. If we admit them to be related to each other as cause and effect, we must suppose the affection of the brain to be produced by congestion of its capillaries, owing to the difficulty of transmitting the blood through the right side of the heart. It may be said that congestion of the capil-

laries of the general system is the effect of obstructed circulation in the left side of the heart, as well as in the right side. Not, however, in so direct a manner; and accordingly, it has been remarked that in organic lesions of the right side, dropsical effusion in the lower extremities appears long before the other symptoms; whereas if the left side of the heart be affected, they occur at a much later period. But still it is not easy to conceive how, in the present case, the symptomatic affection of the brain should have ceased, while the primary disease of the heart which produced it, was becoming daily more aggravated.

It has been remarked that when dropsical effusion is consequent upon disease of the heart, it first appears about the ankles, then in the legs and thighs, next in the belly, and that the thoraic cavities are usually the parts last affected by it. But in our case the belly was free from serous effusion, while the pericardium was full of it. To account for this anomaly, we may suppose the pericardium to have suffered from inflammation; the flakes of coagulable lymph which were found in the serum, render this supposition probable. In a healthy state of the constitution, the occurrence of inflammation in the pericardium would have ended in the formation of false membranes, adhesions, &c.; but during the prevalence of a dropsical diathesis, produced by disease of the heart, we can easily conceive that the quantity of lymph effused might have been so small in proportion to the serum, as to cause the inflammation to end in dropsy of the pericardium.

Within the last three years I have had five well marked cases of disease of the heart, four women and one man. The women were all under thirty years of age, and two of them did not exceed twenty. Only one of them, the subject of the present case, was married. The two youngest were in such circumstances, as to make it probable that the state of their minds had not the slightest influence in producing the disease. The man was more advanced in life, between fifty and sixty, and of irregular habits. Bertin states, that the period at which women cease to menstruate, is the most favourable to the development of diseases of the heart. Our cases, as far as they go, are directly opposed to that conclusion.

In all the five cases there was anasarca of the lower extremities; in one ascites; but in the latter case, the liver was greatly enlarged, and bore evident marks of inflammation, being firmly connected with the diaphragm by a false membrane. In the other cases there was simple enlargement of the liver, without apparent disorganization. In the advanced stages of diseases of the heart the liver is found, as in the present case, to be much enlarged, and sometimes appears wholly displaced, so that its anterior edge is felt below the navel, or even in contact with the crest of the ileum; and yet in many such cases there is no dropsy of the peritoneal cavity. It appears, therefore, that simple enlargement of the liver is not alone sufficient to produce it; but that some other condition is necessary. That condition may be either disorganization of the viscus itself, obstructing its capillary circulation

in a greater degree than simple enlargement, or inflammation of the peritonœum, which terminates in the effusion of serum from the cause already mentioned, in speaking of hydropericardium.

In four of the cases there was haemoptysis, and two of them ended in pulmonary apoplexy. The portion of lung containing the extravasated blood was of a much softer consistence than is usually ascribed to it by authors; a circumstance which seemed to depend on its recent occurrence; but it possessed all the other characters of pulmonary apoplexy. In one case there was no bloody expectoration at any period of the disease. In this latter case, which presented the bellows sound very distinctly, and in which the palpitation was violent, the patient, for about twelve hours before her death, complained of an intolerable pain in the region of the heart. A similar pain occurred in one of those who died of pulmonary apoplexy; but there it was in the right side, which was also the seat of the apoplexy.

As to the pain extending from the shoulders to the tips of the fingers, as it was connected with lividity of the arm, it probably arose from impeded circulation, and was not merely a nervous affection, or one depending on sympathy, as is supposed to be the case in angina pectoris. Could it be an effect of the morbid state of the liver?

With respect to treatment, that which I have found most beneficial, was the administration, under different forms, of digitalis purpurea. In the advanced stages of the disease, in which alone I have had an opportunity of

employing it, blood-letting afforded only temporary relief, and in some instances, it seemed to hurry on the fatal termination. However, I have no doubt, that when employed in due season, it may, in conjunction with proper regimen, prove a most valuable remedy. It may either retard the progress of the primary disease, or prevent its most fatal consequences. Thus it may prevent apoplexy in cases of hypertrophy of the left ventricle; and in all cases it may remove inflammation of the serous membranes, and thereby prevent effusion into their cavities. With a view to prevent the latter accident, it is obvious, that exposure to cold ought to be carefully avoided by those who are affected with disease of the heart.

The following case is an instance of the utility of digitalis, combined with calomel, in treating the advanced stages of the disease.

Anne Moore, had cough accompanied by a copious expectoration of mucous tinged with blood, orthopnœa, violent palpitation, pulse 160 and irregular, œdema of the lower extremities, fullness of the right hypochondrium, and no sleep. She took a pill composed of calomel and digitalis three times a day, until it produced ptyalism. In a short time the expectoration ceased, the swelling of the legs was removed, the palpitation diminished, the pulse, which was still irregular, was reduced to 100; she was able to lie down in the horizontal position, and sometimes enjoyed a sleep of five or six hours duration. In the course of this woman's illness, the same treatment was several times repeated, and with similar good effects.

On examination after death, there were found ossification of the mitral and aortic valves, adhesion of both lungs to the pleura costalis, and dropsy of both sides of the chest and of the pericardium. This woman had been bled for inflammation of the lungs, about three months before she became my patient.

PATRICK CLINTON.

ON
POLYPI OF THE HEART,

AS
AN IDIOPATHIC AFFECTION, AND AS A CAUSE OF DEATH,
BY
WILLIAM HARTY, M.D.

PHYSICIAN TO THE KING'S HOSPITAL, AND TO THE PRISONS OF DUBLIN.

Read, 7th February, 1830.

“ Ce qui est extraordinaire, n’ est pas impossible.”—SENAC SUR LE CŒUR.

HAVING had, during a period of more than twenty years, an extensive field for medical observation, furnished to me by those public institutions with which I have been connected, and having cultivated that field with some industry at least, it had long been my intention to bring together the scattered fruits it supplied, and to lay before the Profession, as my contribution to its store, such of the productions as might seem to possess any value in elucidating the history of disease. With that feeling I had long since and with much labour constructed, as the

basis of my operations, a series of tables, exhibiting the positive and relative frequency of disease in these countries, with the further intention of illustrating each class by a few interesting and instructive cases. As yet, however, I have found that, consistently with the discharge of existing duties, and reasonable attention to a state of health which had suffered by previous exertions, I could not command leisure adequate to the creditable execution of such a task; and I have now vainly to regret that I did not, at an earlier period, adopt other channels of communicating some of the facts within my knowledge, when those facts were more recent, and their impression, consequently, more lively in my recollection. Being unwilling now that they should longer incur the risk of either literary indolence or of advancing years, and roused to exertion by the praiseworthy example of my brethren, I have hastily sketched the few cases which follow, and which, as serving to illustrate a remarkable affection of the heart, will, I trust, be deemed sufficiently interesting to procure for them insertion in the forthcoming volume of the associated physicians of Dublin.

The cases, to which I shall in the first instance draw attention, relate to a disease, the very existence of which has been by many denied or doubted, though admitted by some pathologists of acknowledged eminence. Polypus concretions, found in the several cavities of the heart, have been by too many regarded in all cases as the mere products of Nature's expiring efforts, as the effect of death, and in themselves constituting no cause of disease; whereas Corvisart admits, that "they may be, and frequently

"are, the cause of death."* In proof of this assertion, he gives the details of two dissections in which such concretions were formed, firmly adhering to the fleshy pillars of the right ventricle in one case, and of the left in another, the pillars themselves being entirely destroyed where it had adhered in the latter case, proving that it had been "formed there long before death." On many other occasions, he adds, "I have seen these concretions "usually of a yellowish white, and of a fibrinous struc-

* John Bell is foremost among those, who more than doubt the existence of polypi in the heart *before death*, for he states distinctly, that they "are really formed in the moment of death," though admitting at the same time that "many of the most eminent men have "thought quite the reverse of all this." He, however, asserts, such "singular ignorance" to have prevailed at the time on this subject, that he does not hesitate to assure us, that we "need not look into "books for any satisfaction on this delicate point; for *unhappily* there "are no good histories attached to those dissections, in which the "coagula have been likest to those of a long formed disease." Such were the sentiments of a popular lecturer and writer, and such too are the opinions of many, not furnished with adequate opportunities to enable them to think for themselves. In these sentiments, however, the Profession at large has not participated, for Allan Burns, almost *our* sole author on diseases of this organ, while he admits that it is far from being proved that "polypus of the heart ever exists "as an idiopathic affection," states that "no doubt can reasonably be "entertained respecting the formation of these morbid productions," and in some few cases, "a very considerable time before death." The more ancient writers, and amongst them Hoffman himself, undoubtedly entertained very extravagant notions of the influence of polypi, and (to use the words of Senac, in my judgment the ablest and most satisfactory historian of the disease,) "ont rassemblé avec soin les "examples funestes des accidents que ces concretions ont produits; "mais il semble qu'ils n'ayent pensé qu'à nous donner des histoires "singulieres: ils ont souvent négligé les circonstances, qui ont accom- "pagné les concretions du sang; ainsi la multitude des observations "n'est souvent qu'une abondance sterile."

"ture, so consistent, tenacious, and intimately adherent
"to the internal fibres of the heart, that I cannot but
"admit as a fact, proved by experience, the formation of
"these concretions long before death, and the presence of
"which I have sometimes announced before opening the
"body, from the symptoms of the previous disease."

Corvisart, however, has omitted to enumerate the symptoms, or any of them, by which the disease may be recognised; and Dr. Parr, in his dictionary, ventures to give as its signs, "an unequal intermitting pulse, often accompanied with fainting, difficulty of breathing, or a fixed pain about the heart."* These signs, however, are unfortunately not correct, as indicative of polypus, and even if they did belong to the disease, are too equivocal or too common to other affections of the organ, to be depended on. Laennec, concurring in opinion with Corvisart, as to the independent existence of the disease, and as to its several species, is at the same time more satisfactory, inasmuch as he makes a good general attempt at establishing the symptomatology of the affection, drawing

* Dr. Parr has probably taken these signs from Van Swieten and others who preceded him.—"Polypos autem in cordis cavis," says Van Swieten, "hærere novimus ex palpitatione cordis perpetua, pulsu *omnimodo inéquali et saepius intermittente*," &c. Sauvages gives from Senac a more distinct, yet nearly similar detail of the symptoms peculiar to polypus, as existing in the right and left ventricle, entertaining no doubt whatever of the reality of such concretions long before death, though he admits, as strongly as John Bell could desire, "maximam partem polyporum, qui in cadaveribus reperiuntur, in agone mortis ortum duxisse, coagulatâ et concretâ sanguinis lymphâ, ut sanguis pleuriticus in patella coagulatur." In the cases I am about to detail, we shall find there was neither irregularity nor intermission in the pulse, nor the slightest tendency to syncope.

his diagnosis, as might be expected, from stethoscopic observation.—“ Je pense,” he says, “ que le cylindre fera “ reconnaître les concretions polypiformes du cœur, anterieures à la mort, quand elles auront un certain volume “ J’ai annoncé plusieurs fois leur existence d’après les “ signes suivans, *que je n’ose cependant donner comme certains*, parceque je n’ai pu encore recueillir beaucoup “ des faits a cet égard. Lorsque, chez un malade qui justement avait présenté des battemens du cœur reguliers, “ ces battemens deviennent tout à-coup tellement anomaux, obscurs et confus qu’on ne peut plus les analyser, on peut soupçonner la formation d’un è concretion polypiforme. Si ce trouble n’a lieu que d’un seul côté du cœur, la chose est a-peu-près certaine. Ainsi lorsqu’en explorant le cœur sous la partie inferieure du sternum “ on trouve ces battemens confus et tumultueux, tandis qu’ils étaient réguliers la veille, on peut regarder comme très probable qu’ils s’ont formé une concretion polypiforme dans les cavités droites, surtout si en même temps les contractions du ventricule gauche, explorées entre les cartilages des cinquième et sixième côtés, se font entendre plus distinctement.” These observations I consider highly valuable, as general guides in a path hitherto so obscure and indistinct—they indicate the great tact and experience of that consummate observer of disease, without furnishing however such satisfactory evidence of the existence of the affection, as could bring conviction to men of ordinary minds. Besides, should these polypus concretions affect both ventricles at the same time, (as was the case in one instance about to be detailed,) what is to

guide us to a conclusion? In the hope that the subjoined histories may contribute to enlarge our views, and direct our steps more securely, I shall now proceed to detail them.

The two following cases, which it was my lot, and I might add, my misfortune to encounter, before the stethoscopic æra had commenced in Ireland, appear to me well calculated to establish two positions, *first*, the undoubted existence of such concretions, not only *as a cause of death*, but as the source of independent and idiopathic disease; and *secondly*, the determination of a diagnostic sign or signs, by which the occurrence of the disease may be surmised with some certainty, even without the highly valuable co-operation of the stethoscope.

CASE I.

Miss R., aged about 14, of slight frame and narrow chest, (being one of a very phthisical family,) had for several years been subject to repeated attacks of chorea, all of which had yielded to active and long continued purging. In December 1814, she began to exhibit indications of a return of the same disease, in the peculiar motions of the hands and distortions of the face. While in this state, and before I had been consulted, there occurred (on the 13th) one of the most violent storms with which Dublin had for a long period been visited, raging chiefly during the night. During its greatest violence, one of the large slates of her father's house was dashed with a furious crash against the lobby window—

the sound roused Miss R. from her sleep—she rushed from her bed in a state of extreme agitation, under an impression that the house was falling, and a considerable time elapsed before she was restored to any degree of composure. The symptoms of chorea were aggravated by that occurrence, a state of fever, with palpitation and hurried respiration, also following the excessive alarm it occasioned. These latter symptoms, however, as I was given to understand, abated, and I was not sent for till the middle of January, by which time the chorea had made further progress, despite of the means employed in the interim, and which consisted in a recurrence to the purgative plan formerly pursued. The family was in very comfortable circumstances, but its head was little disposed to any expenditure that could be avoided, though very fond of his children, and, (as is usual in too many cases,) to their detriment, by indulging them in food too gross for their years. The urgent symptoms in January, when I first saw her were, besides those peculiar to chorea, a febrile state with a pulse at 112, pain of the chest and left side, with delirium at night. Palpitation though existing, and easily excited in a frame irritable like her's, was but little complained of. These symptoms were all relieved by a first bleeding to 3xii. and with the aid of free purging (the feces being first black, then mud-coloured,) both the chorea and the febrile state had considerably abated, until a long jaunt in an open car, in the month of February, re-excited the fever, and aggravated the chorea. These again yielded to a second V. S. and a repetition of the other remedies, and Miss R. was proceeding very

favourably until she experienced an attack of inflammatory sore throat about the middle of March, by which time the symptoms of chorea had almost altogether ceased. There was then much feverish heat, with delirium at night—the vessels of the head much distended—some dyspnœa with palpitation; the pulse 120 and full; pain of epigastric and right hypochondriac region on pressure; the alvine discharges highly bilious. She was bled the third time to $\frac{3}{4}$ xii. and, for the first time, the blood was buffed. She took James' powder, calomel, and other purgatives, and experienced speedy relief. The pulse fell to 100; the skin was moist; sleep good; no dyspnœa, and the action of the heart, though sometimes violent, was never troublesome. To relieve the state of the circulation, digitalis with purgatives was administered, and a strict regimen enjoined. The patient being resident about a mile from town, and economy being the order of the day, I received no encouragement to visit the young lady as frequently, as under such circumstances was expedient, nor was I indulged with a single consultation during the whole course of the disease: for some little time I did not again see her till the 2d of April, when I was informed, that having walked abroad before breakfast on the 31st March, (the morning being cold) she was that night attacked by marked symptoms of fever, with dyspnœa, violent palpitation, œdema of the face, fullness of the abdomen, the pulse (as her mother stated) being intermittent and irregular. When I saw her the pulse was 128, and perfectly regular: there was dyspnœa without cough; constant palpitation; œdema of the face with a

papulous eruption; the skin hot and the urine scanty and high coloured. On the 3rd the breathing was somewhat relieved by bleeding and a blister; the pulse 120; there had been great heat of skin during the night, followed by very profuse perspiration, and the feces, which had assumed a more natural appearance, were again dark. On the 4th she had had a very good night, with profuse perspiration: the breathing though quick, was not oppressed; the œdema less, and confined to the left side of the face, *on which she chiefly lies*—the pulse 116, regular and full; feces improved in appearance; urine more copious; and now for the first time a short cough, “affecting the throat,” began to teize her. There being a great horror of bleeding on the part of the patient and family, eight leeches to the region of the heart were reluctantly assented to, and were not applied till the following morning, (the 5th) after a very bad night from incessant cough and oppressed breathing, with palpitation violently increased by lying on the left side, and also by her agitation on the application of the leeches, of which five only would bite. *At noon* the breathing was quick, but less oppressed; the alæ nasi distended; the pulse 118, full, strong and regular: *at night* it fell to 108; the leech-bites (under the evident influence of the palpitation) having bled most freely during the whole day, wetting twenty-four large towels; the cough and breathing much easier; slept quietly for an hour, but on awaking the breathing was oppressed, and the face swelled; much less so now—the eye clear and lively; face pale; voice good; urine very scanty; palpitation much relieved; says she has no

pain ; twenty drops Tr. digitalis, with some laudanum for the night ; leech-bites still bleeding, and continued to discharge freely till two in the morning of the 6th ; slept five hours quietly, though respiration was quick and hurried. Pulse (at noon) 116 ; full ; action of the heart strong ; prefers lying on the right side ; full inspiration produces neither pain nor cough ; alæ nasi in action ; Tr. of digitalis every sixth hour, with opening medicines, &c. In the evening the pulse 120, hard, *vibrating, communicating a peculiar thrilling, whizzing sensation to the finger, on touching any the minutest artery in the body* ; respiration very quick ; much heat of skin and swelling of face ; V.S. ad lbi. ; blood very buffy ; pulse after V. S. 112, and softer. 7th. Slept quietly during the night, though in profuse perspiration, and with very quick breathing.— Pulse 120, same as yesterday ; V. S. ad lbi. In the evening, symptoms the same ; V. S. iterum ad lbi. ; pulse after it unaltered ; strength and voice good ; can take a long drink ; lying on left side excites incessant cough ; urine increased in quantity ; proportion of serum in the blood very considerable, coagulum very firm and buffed.

8th. Slept two hours after last V. S. ; very little sleep since ; a bad night with oppressed breathing ; pulse is now 106, regular, and much softer ; alæ nasi less active than they had been ; pupils dilated ; mind very distinct ; voice good ; no pain ; cough softer ; some vomiting during the night, probably from the digitalis which had been increased to twenty drops every sixth hour ; bowels freely moved ; a blister to left side did not act ; very pale ; tongue white towards base. 9 o'clock *at night*, slept composedly for

four hours ; awoke refreshed ; respiration less quick *during sleep*, and motion of alæ nasi much diminished ; pulse now 106 hard ; skin hot and dry ; V. S. ad 3viii. ; bore it well ; pulse softer ; urine free ; another blister to side.—9th. Had a very uneasy and distressing night between vomiting, restlessness and cough ; was thought to be dying ; became drowsy in the morning, and has taken very little drink ; respiration was “ panting ;” now much easier, thirty-eight in the minute ; pulse 108, of tolerable strength ; is drowsy ; eye dull ; blister has risen ; alæ nasi in less motion ; respiration slower ; *lies perfectly horizontal* ; cough strong ; a strange rumbling noise as from stomach to throat frequent ; palpitation greatly increased by *erect posture*. 10th. Very restless and uneasy during the night, though drowsy and occasionally delirious ; lies on both sides, and now chiefly on the left, and still horizontal ; breathing more laborious ; cough strong ; strength considerable ; pulse 120, still strong, and uniformly imparting to the finger the sensation formerly described ; drinks freely ; eyes dim ; facies hippocratica ; feet cool ; hands, arms and body hot and dry ; very distinct when addressed. She continued nearly in the same state until five in the afternoon, very restless, yet collected ; said frequently she was dying ; about 5 o'clock she sat up and called with great strength to make water, which she did to the amount of half a pint of pale urine, and on being laid down instantly expired.

With much difficulty I obtained permission about twenty hours after death, to make a *single* incision in the thorax. The lungs were sound ; no adhesion whatever, and very

little effusion into the cavity. Lungs and heart much limited in space by the liver, which was of considerable size, extending upwards into the thorax, downwards to the umbilicus, and also far to the left side. The pericardium exhibited some little appearance of inflammation ; it contained about 6oz. of clear serum, without any coagulable lymph. The heart itself was enlarged, with increase of muscular substance—the vessels on its surface much distended ; a small incision effusing a good deal of blood. Having (though strictly watched,) succeeded in removing the heart itself, with a portion of the large vessels, the following appearances presented themselves to view on opening its cavities :—a distinct polypus of a whitish colour, unconnected with any coagulum, nearly filled the right ventricle and auricle, its branches extending into the great vessels, one branch being more than eight inches in length ; the whole polypus adhered *so slightly*, as to be readily drawn out by the fingers ; but a thick membranous substance of the same colour adhered with much firmness to the *external* side of the ventricle, penetrating into its interstices, and by means of both membrane and polypus, the valves were bound down, and must have been altogether impeded in their action*—both auricle and ven-

* By the "external" side of the ventricle, I mean that opposed to the septum—I may take this opportunity of stating that Laennec, as well as those who have preceded him, specify the *right* auricle and ventricle as the chief seats of polypi, whereas in both my cases, as well as in many others, they were chiefly in the left. Laennec also states, " quil est encore une troisième espece de concretions plus anciennes et dont la formation est peut-être antérieure des plusieurs mois à la mort des sujets chez lesquels on la rencontre : ces concréctions sont adhérentes au parois du cœur et ne peuvent même en être

tricle were of a vivid colour, and of an inflammatory aspect. The left ventricle and aorta, however, presented a far more singular phenomenon. The ventricle was divided into two nearly equal cavities by an adventitious whitish membrane, firmly adhering to the internal apex, and to the sides of the ventricle in a line nearly parallel to the septum, and terminating, as it approached the aorta, in a rounded organised polypus, tapering to a point, and entering above an inch into the aorta, which communicated very obliquely with the ventricle—the two cavities into which the ventricle was thus divided communicated with each other very partially, where the membrane terminated in the rounded polypous concretion. The side of the membrane towards the left auricle was uneven; towards the aorta smooth. That auricle had the same inflammatory appearance as the right, and its valves were impeded by membranous layers, as those of the aorta were by the polypus—three of the carneæ columnæ were much enlarged; one of them being more than twice the size of a goose quill.

I regret to add that this morbid specimen is lost, at least to me: having immediately shown it to several of my medical friends, and, amongst others, to Dr. Colles, Professor of Anatomy to the College of Surgeons, he requested that I would permit him to exhibit it to his class, as he was at that time lecturing on diseases of the heart;

“*detachées quelquefois qu'en raclant avec la scalpel.*” Je n'ai trouvé, he adds, “*de ces concretions que sur les parois des oreillettes ou dans leurs sinus.*” In this dissection, however, a similar membranous concretion is found in the right ventricle.

I assented to his wish, on condition that it was put in a state of preparation worthy of its value. When reclaimed some months after, it was not to be found; but in saying so, I must fully acquit my friend, the Professor, who evinced the most anxious desire for its recovery; it went astray amongst those entrusted with the preparation. The morbid specimen furnished by the patient, whose case is next to be detailed, was in this respect more fortunate, as it is safely lodged in the Museum of my friend, Dr. Montgomery, Professor of Midwifery in the College of Physicians.

But before I proceed with this case, it may not be amiss to premise some queries respecting that already detailed—and first it may be asked, What was the nature and extent of the injury inflicted on the heart, in the first instance, by the terrors of the December storm? Was it then a general or partial affection of the organ, or was the nucleus of the disease then formed? Is there not under all the circumstances of the case reason to conclude, that the polypous membrane of the left ventricle had priority over that of the right,* and that the great aggravation of the symptoms, together with the peculiar sensation imparted by the pulse, was caused by, or was concurrent with, the extension of the polypus into the aorta? Was inflammation or hypertrophy of the heart a cause or an

* "Il est rare," says Senac, "qu'il se forme deux *vrais* polypes "dans les deux ventricules ou dans les deux oreillettes: ceux qui "occupent ces deux cavités sont plus souvent, *l'un ou l'autre*, des con- "cretions récentes." He adds, and with his usual precision and correctness, "que les concretions du ventricule *droit* doivent souvent "leur naissance à celles du ventricule *gauche*."

effect of the polypous concretions? After detailing the next case, I shall offer some observations on the symptoms by which they seem to have been peculiarly characterised.

CASE II.

Master M., aged 13 years, and of delicate structure, on the 13th December, 1818, manifested symptoms strongly indicative of measles, then epidemic, and very fatal: and, amongst other indications of a highly disturbed system, there was somnambulism for two preceding nights. The eruption appeared on the following day, (14th) with a hard cough, and some pain on inspiration; skin very hot and pulse 100. In the evening he was bled to $\frac{3}{4}$ viii. On the 15th, the eruption was general, the pulse 120, full and hard, with pain on inspiration; V. S. ad $\frac{3}{4}$ viii. with relief, and in the evening the wound discharged two or three ounces more; after which he had a quiet night. *On the morning of the 16th*, however, inflammation suddenly attacked the trachea with painful and laborious inspiration, and a P. at 130; he was bled to $\frac{3}{4}$ vi. without relief, and about noon ten leeches were applied to the throat, and a blister between the shoulders; pills of calomel and James' powder, afterwards combined with ipecacuanha, were also freely administered. *In the evening* the respiration was quick, laborious and painful, with wheezing; the pulse 140; the face *œdematous* and livid; no cough; at this time his situation appeared almost hopeless; he was put into a warm bath, and an emetic administered, by which some mucous

and purulent matter was discharged ; a blister was applied to the sternum, and the pills taken every hour. 17th. After a bad and restless night, the trachea is this morning much relieved. Expectoration freer ; pulse 136, hard and full ; respiration 40 ; complains of pain in epigastrium, particularly on pressure ; epigastrio hirudines viii. ; vesic. inter scap. *In the evening* his pulse 144, and palpitation noticed for the first time ; never ceasing till death ; respiration more hurried and oppressed ; V. S. ad $\frac{3}{4}$ vi. ; blister to throat ; he asked for the warm bath, and was indulged ; had a restless night ; respiration 50 ; dyspnœa at times very distressing from mucus in the trachea ; started up suddenly from his sleep, and was with difficulty prevented from leaving his bed ; towards morning expectoration freer ; pulse 130 ; respirations 40, and less laborious ; and so they continued during the greater part of the 18th ; yet as the pulse was full and strong, the skin hot, and pain complained of in the epigastrium, he was again bled to $\frac{3}{4}$ vi. and felt relief from the operation. In the evening pulse 124, respirations 40. Besides the pills as heretofore the Tr. of digitalis was ordered, seven drops every third hour, afterwards increased gradually to twelve drops ; passed a tranquil night, with much comfortable sleep ; pulse ranging from 120 to 130 ; respirations 38 ; dyspnœa only occasional and readily relieved by expectoration ; at times a little incoherent. In the morning of the 19th, pulse 128 ; not so full ; breathing easier ; expectoration freer ; lies horizontal with ease ; urine plentiful ; eruption of measles has now altogether disappeared, but there is œdema of the face, and *slight emphysema* of both arms. At 4 o'clock,

p. m. the pulse was full and hard; skin hot with much thirst, and breathing more oppressed; V. S. ad $\frac{3}{5}$ vi.; blood more buffed than formerly; complains of *noise in ears*; tongue cleaning. At 11 o'clock, p. m. breathing relieved; no wheezing; pulse 128; less full, but wiry, and beginning to impart the *peculiar sensation* described in the former case; skin is hot; sleeps quietly. Passed a very tranquil night, sleeping composedly, without delirium or moaning, and unassisted, occasionally changing his posture from side to side; respiration though quick, not oppressed; expectoration free; bowels well emptied by enema with much flatus, but no urine; towards 6 o'clock however, of the morning of the 20th, the pulse became more full and strong, and the arterial action already referred to, having increased with pyrexia and more "forced expirations," $\frac{3}{5}$ vi. of blood were taken, according to previous directions, from the arm, by Mr. Harrison, his very judicious and vigilant attendant during the nights, and to whom I am indebted for regular reports of all the nocturnal transactions. The blood flowed rapidly, and the pulse though not changed in frequency, became more compressible; after it he had a composed sleep. At 10 o'clock, a. m. pulse was 132, with the same rapid thrilling action, as of a fluid rushing through a tube it did not fill; a sensation imparted by every artery however small, and experienced even through the thick muscles of the extremities. Skin hot and dry; face œdematos; arms and thorax *emphysematos*; respiration regular, quick, not oppressed; no motion; soreness of epigastrium; calomel and Dover's powder three grains each, with half doses every third

hour ; Tr. of digitalis, ten drops every four hours ; warm bath. 4 o'clock, p. m. has slept much since bath ; skin moist ; pulse 128 ; but little wheezing ; expectorates freely ; no motion as yet ; former medicines discontinued, and a purgative draught with enema ordered, and as the belly felt tense at night, stronger purgatives were prescribed ; these acted freely during the night, and brought away much dark green feculent matter with urine ; in other respects, this was by far the most comfortable night he had yet passed, the pulse seldom exceeding 120, the respiration quiet—the expectoration free, not copious ; belly soft ; heat of surface uniform ; very tranquil, with calm sleep at intervals, without any raving. 21st, 10 o'clock, p. m. Urine abundant, amber coloured ; face less swelled ; chest, arms and spine emphysematous ; belly soft, tongue cleaning ; respiration calm ; pulse 126 ; fuller and less thrilling ; purgatives and warm bath repeated. About 2 o'clock, p. m. however, he began to complain of pain and soreness at the region of the heart, and at 5 p. m. the pain was aggravated by inspiration, producing stitch ; the skin was hot and dry ; pulse 134, full, and throbbing ; fullness in right hypochondrium, with pain on pressure ; several motions of a more yellow shade ; now lies on left side, though he says he can lie better on the right ; hirudines sex regioni cordis : Tr. of digitalis gtt. xii. 4tis. horis. At 10 p. m. skin less hot ; pulse 130, less throbbing ; pain now confined to a spot more anterior ; is more aggravated by inspiration than by cough ; leeches did not bleed very well ; asks for more himself ; applic. iv. and empl. vesic. sterno. Rep. purgantia and Tr. of digitalis. The leeches

were immediately applied, and bled freely; during the early part of the night the pulse was remarkably full; the respiration hurried; dyspnœa occasional, of short duration, but very distressing; wheezing relieved by expectoration; bowels well moved with much flatus; countenance at times expressive of much anguish, with corrugated eye-brows. At 3 o'clock in the morning he awoke from sleep much agitated, and desired to be raised in bed; says his feet are enlarged, and wishes them to be stuped; complains but little of the pains; and towards 7 o'clock, a. m. of the 22d, the pulse was softer, the pain and dyspnœa much abated; the face, though pale, improved in expression, and he himself more tranquil, yet sleeping little. At noon, the pain, he says, is much less; the pulse 140, very thrilling; respiration quick, not oppressed; alæ nasi distended, and in brisk motion; cough, dry yesterday, moist to-day; less emphysema; lies on *left side without uneasiness*; bowels well moved; ext. hyoscyami gr. ii. 3tis. horis—emp. vesic sterno alterum. Rep. Tr. digitalis. In the *evening* the respiration was 56, with wheezing and free expectoration; alæ nasi more distended; pulse 140; more full; palpitation and thrilling sensation as usual; 'hirudines sex et postea cucurbitulæ applic.' about 6oz. of blood were thus taken from the left side of the thorax; after which the pulse varied much, from 140 to 150, and the respiration 60; some delirium; emp. vesic. regioni cordis. Rep. pil e calomelane, pulv. jacob and Ipecac.—*During the night* the skin was of a pungent heat; the pulse at 140; respiration varying from 46 to 58, laborious and irregular; no cough; lay chiefly on left side; raved much;

extremities feel cold; employs his hands more than usual; free discharge of urine; towards morning more composed.

On the 23d, at noon, still raves, but is perfectly distinct when spoken to; respiration, which had been 60, is now 46; pulse 140, thrilling; skin much cooler; very free alvine evacuation, with solid feculent matter; says he has no pain; dozes much; *alæ nasi* very much distended; *lies horizontal*; no emphysema: face pale and sinking. At 7 o'clock, p. m. asleep; respiration 40; pulse 136, regular; much wheezing; on awaking coughed and expectorated readily; raves a little, but still very distinct on being addressed; asked for a vessel, wherein to make water; arms and legs and breath cold; increasing difficulty of deglutition; after drinking was much flurried, and pulse much smaller; lies on his back with raised knees. In this state he continued till about 3 o'clock in the morning of the 24th; the pulse about 130 and small; the respiration varying from 50 to 64, the expirations accompanied with blowing; at times considerable agitation, fancying various objects in his bed; especially an "unsheathed knife." The final scene in this melancholy history now draws to a close: I shall describe it in the words of my intelligent reporter, Mr. Harrison.—"A few minutes after three, he changed his posture, and passed urine unconsciously; the breathing became more than ever distressing, the pulse suddenly sunk to 60; the pulsation still regular; slight distortion of the features; makes unavailing efforts to expectorate; articulation indistinct, yet knows those around him; receives his drinks with eagerness. Soon after the pulse again ascended; respiration more painful and hurried;

“ thorax elevated at each inspiration ; moans heavily ;
“ once made a strong exertion, and almost raised himself
“ to a sitting posture ; gasping effects consequent on the
“ great accumulation of mucus. These symptoms conti-
“ nued about an hour and a half ; the breathing now gra-
“ dually becomes slow and quiet, the pulse reducing, yet
“ not intermittent ; hands perfectly cold ; lies on back
“ with knees raised to the trunk, and thus he continued,
“ life gradually extinguishing, till a quarter to 5 o’clock,
“ when he expired without a struggle.”

I have been thus minute in the details of these cases, because I know of none similar on record, and for insuring greater precision and more certain results, have again to express my regret that I had not then the valuable aid of the stethoscope. In the latter case I received from the intelligent parents of this very interesting boy every assistance that the warmest affection and the most ample means could supply ; and deep as was their affliction, aggravated by the simultaneous illness of their other children, I obtained their ready assent to examine the body after death. Having had the co-operation of Dr. Crampton and the Surgeon General throughout the greater part of my attendance, the former, together with Messrs. Meredyth and Harrison, the apothecaries, were present at the dissection ; *before* which, from a strong recollection of the analogous case of Miss R., though at an interval of nearly four years, I felt no hesitation in saying, that an organised polypus would be found in the heart.

The morbid appearances, ascertained on dissection, were as follows : there was a considerable depression of the

sternum, forming an arched hollow between the mammae; a fact obvious to the eye during life. There was also unusual thickness of the sternum from the point of elevation upwards; there was slight adhesion of the left lung to the pleura in one or two points; also, a slight degree of adhesion near the junction of the two lobes; the external coat of the pericardium was evidently inflamed, though not to any great degree or extent, and there was about an ounce of serous fluid in the pericardium. The liver was enlarged in its dimensions, though by no means to the same extent as in the former case; it was otherwise apparently healthy, while the heart itself appeared larger than was compatible with his years, and the general structure of his frame. The left ventricle and auricle of the heart contained a large and singular polypus, unconnected with any coagulum, and adhering firmly in some parts, and more loosely in others. In the auricle (properly so called,) it adhered firmly throughout, maintaining a perfect union therewith by a number of lateral projections, and thence descending into the ventricle by a long and narrow neck, it formed a flat and firm adhesion to the side of the ventricle, throwing out at the same time a band, whereby it was connected to the polypous concretion which loosely occupied the apex and body of the ventricle, and extended thence into the aorta. The body of the auricular polypus branched largely into the pulmonary veins, and in its thickest portion contained a distinct, dense, and compact clot of blood, enveloped therein.*

* "Plus la lymphe," says Senac, "se durcira rapidement, plus elle retiendra des parties rouges, qui a leur tour se coagulent."

On a comparison of these two cases, we shall find them to agree in certain particulars, and to differ in others.—Their points of agreement and disagreement are as follow:—The patients were of the same age, though of different sexes; they were both of delicate structure, (the boy more than the girl,) of *consumptive* habits and narrow chests; the boy with marked malconformation; the girl a spoiled child, of irritable temperament, aggravated by chorea—the boy of a mild, yet sensitive mind, and cheerful temper, readily complying with the wishes of others. The exciting cause in one was sudden terror, aggravated in its effects by previous disease and exposure to cold—in the other, the morbillous state, aggravated by malformation of the chest, affecting the action of the heart. The disease in each was *apparently* of very different duration, though *in reality* probably the same, at least in its acute stage—with Miss R., the alarm was experienced in December, and death followed in April, whereas with Master M., the whole duration of his illness, from the 13th to the 24th December, was *eleven* days, being the *precise* duration of the acute stage with Miss R. who was exposed to a severe N. E. wind on the 31st March, and died the 10th April; the long continuance of the preliminary stage however, showed its influence in the greater enlargement of the heart and of its columnæ carneæ, and in the greater extent and firmer adhesion of the polypous concretion.

The symptoms common to both, *as well as to other affections* of the heart, were palpitation, hurried respiration, pain about the region of the heart, epigastric tenderness, a pulse quick and strong, with cough and temporary dif-

ficulty of lying on left side; in some of these symptoms they differed as to degree, the respiration and pulse being more quick and hurried in Master M. whose pulmonic system was more extensively affected by previous measles, and whose cough was consequently attended with expectoration, whilst the pain in the region of the heart was with Miss R. earlier, and more severe. The symptom however, which seemed *peculiarly* to characterise the disease in each was that singular thrilling, whizzing sensation, which every artery in the body, as well as the heart, imparted to the touch—and it is not a little remarkable, that this sensation was first noticed in each on the *fifth* day before death,—in Miss R. on the 6th, and in Master M. on the 19th. This symptom I consider the great diagnostic sign of the existence of polypus in the heart, or at least in its left ventricle, though it is to be regretted that it should occur at so late a period of the disease.* When

* A quere may here arise, more easily proposed than answered. Is there any, and what difference in the symptoms and urgency of danger produced by polypous concretions in the right and left ventricle? Is the thrilling sensation, for example, already described, common to both, or is it peculiar to the latter? The left ventricle was, no doubt, the chief seat of the disease in the two cases in which it was so distinctly experienced. Time and future more correct observation can alone determine the question. Sauvage makes the distinction between them consist in the very indeterminate difference of more or less dyspnoea: “polypus in auricula vel ventriculo sinistro majorem dyspnœam inducit quam qui dextro.”

As regards the general diagnostic signs, Burserius states, that he himself had more than once observed that some of the symptoms deemed pathognomonic, not excepting the *intermitting* or *irregular* pulse, have, at times, been wanting. Notwithstanding the uncertainty of the general diagnosis, he attempts a distinction between the polypus of the right and left cavities, upon grounds obviously un-

it does occur I am disposed to conclude, that the polypus has entered the great vessels issuing from the heart, thereby obstructing the action of the valves and the free flow of the blood. From this view of the subject, therefore, if correct, it would follow that polypus may exist in the heart without this diagnostic sign, *provided* it has not entered the valves. In Miss R.'s case I can entertain very little doubt, but that the polypus had been forming long before this symptom manifested itself—that could not have been the case with Master M. in whom the affection of the heart did not appear, at least did not attract any notice until the 17th (i. e. the 5th day,) and accordingly, we find great difference in the extent and character of the polypi, and in the firmness of their adhesions; that of Master M. being much more rapid in its growth,—and its auricular portion most probably the earliest.

There are three other remarkable symptoms in which these cases agreed, but how far they are to be deemed diagnostic I will not undertake to decide—there was in both, and at an early period, œdema of the face—there existed in both, even when the disease was most severe, the power of lying perfectly horizontal without any distress, and also of lying on the left side, when previously they

nable, as founded on cases in which other diseases of the heart had existed besides polypus. The intermitting or unequally irregular pulse, greater palpitation and uneasiness, more difficult respiration and cough, with an uneasy sensation in the chest, are the signs by which, he says, polypus in the left ventricle is to be suspected. Malpighi and others give, among the general diagnostics, a vibrating pulse, dilatation of the vessels of the neck, torpor of one or other arm, and an obscure pulse in the same; panting, and œdema of the feet and eyelids.

could not do so: and there prevailed in both, (so far at least as came under my observation,) from the beginning to the termination of the disease, the most perfect regularity of the pulse. In both there was early, as also occasional delirium throughout the disease. The most remarkable difference between the two cases would appear to be the emphysema, which occurred in Master M. on the 7th day, but whether that symptom was purely accidental, or originating in any peculiarity of his disease, was not easy to decide; dissection furnished no explanation—it nearly disappeared before death, and never was considerable. My impression is that it was altogether accidental, and originating in the irritation of the cellular membrane, caused by frequent bleedings—in support of this opinion, it may be remarked, that the affection commenced in both arms, though I cannot now call to recollection whether the lancet wounds exhibited any thing remarkable, for they were not suspected at the time.—This we know, however, that fatal emphysema has sometimes proceeded from the insertion of a seton or issue in subjects disposed to inflammation of the cellular membrane—one case of the kind fell under my own observation, and I have heard of others.

Another difference between Miss R. and Master M. consisted in the manner of their dying—that of the young lady being sudden, and his gradual.* This difference,

* *On pourroit peut-etre conclure,*" says Senac, " que la mort subite " est inevitable pour ceux qui ont des polypes dans la cœur, mais il y " en a qui perissent insensiblement."—" Il n'est pas surprenant," he adds, " que les polypes qui produisent les syncopes causent les morts " subites," syncope being, as he says, a frequent symptom; but not if

however, may probably have depended on the different extent and character of the disease in each—in her case, every cavity of the heart was affected by polypous concretions—in his, the left auricle and ventricle only. I have

the polypi be small, and if the passage of blood be sufficiently free. He cites several cases in illustration of his position, and in all these the polypi were found in the *left* ventricle. As I attach some weight to Senac's name, and would strongly recommend the perusal of his chapter on polypus to those who feel any interest in the subject, I will here mention a circumstance which evinces the strictness with which he examined all supposed cases of idiopathic polypus. Vieusseus records the case of a patient who had had an attack of epilepsy; the pulse was hard, unequal, and frequent; palpitation so violent, that if he lay on the left side, the heart struck the ribs as if it had been a mallet. The cause assigned for these symptoms was a polypus in the right ventricle, and dissection *seemed* to confirm the opinion. But says Senac, “l'oreillette gauche étoit extrêmement dilatée, les valvules semilunaires étoient pierreuses et découpées,” and he then asks, “or n'étoit-ce pas à ces valvules durcies et à la dilatation, qu'il falloit attribuer tous les accidents et *le polype même*.” And yet of the author, whom I thus venture to recommend, Bertin, the latest French writer on diseases of the heart, thus strangely remarks, “que cette distinction des polypes (into true and false,) regnait dans les écoles, lorsque Morgagni et Senac soumirent ce point de doctrine à une critique rigoureuse et *revoquerent en doute l'existence des polypes vrais.*” Could Bertin have read, and, after reading, say so of an author, who distinctly states, “que les concretions dans les derniers instants de la vie ne sont pas extrêmement durs ou tenaces; *c'est la* le premier caractère qui distingue les masses polypeuses pré-existantes de celles qui sont les productions de la mort. Lorsqu'il se trouve des corps polypeux fort durs, élastiques, tenaces, membraneux, jaunâtres dans les ventricules du cœur; lorsqu'il est survenu des accidents, qui marquent que le cours du sang étoit troublé dans ce viscere; lorsqu'en même temps *il n'y a point eu quelque vice dans son tissu*, on peut s'assurer que les polypes existoient avant la mort.” Leur consistance dure, tenace est la seule propriété qui caractérise les vrais polypes: mais cette peut étre quelquefois équivoque. On ne peut donc alors étre assuré de la préexistence des polypes que par des effets que produisent ces concretions.”

notes of several cases, wherein death occurred very suddenly, and in the subjects of which I found organised polypi in both ventricles; but as the diseases presented a very complicated aspect, I shall not here dwell longer on them than merely to remark, that they all occurred about the same period either with Miss R. or Master M. thereby illustrating a conjecture of the ingenious Laennec, "que peut-être même l'influence de la constitution regnante contribue-t-elle à leur formation autant que l'état particulier du sujet. J'ai remarqué au moins que dans certain temps on en rencontre beaucoup plus fréquemment de très volumineuses."* Three cases of this description

* In confirmation of this conjecture of Laennec, I may here refer to a singular detail given by Dr. Chisholm, in the 5th vol. of the Annals of Medicine, of what he calls an "epidemic polypus." The disease occurred at Grenada amongst the slaves, and was evidently of an anomalous intermittent character. After a few days the pulse became extremely quick, from 120 to 140, with intermissions and a penetrating pungent heat, producing a pricking sensation on the finger—"during the paroxysm the struggle for breath, the aggravation of all the other symptoms, and the very quick, interrupted and evidently visible, as well as audible palpitation of the heart, produced a scene of uncommon horror." The second paroxysm generally put a period to the existence of the patient, though sometimes the disease seemed inclined to terminate by metastasis, of which he gives one remarkable instance. Dissection disclosed polypi of considerable size (not otherwise described,) in one or more of the cavities of the heart, and, (except in one instance of diseased lungs,) without "any other morbid appearance of any description," being to be perceived. Dr. C. states that after this discovery, his mode of treatment was to bleed the moment he could distinguish the disease, in order to render the circulation through the lungs and heart less difficult and obstructed but never to repeat the operation without great caution, and the most evident necessity. He then gave calomel (guarded with opium,) in five grain doses every fourth hour till salivation was excited.—"Under this treatment," he adds, "I lost not a single patient; the fatal termi-

came under my notice within a few weeks of the date of Miss R.'s case, and I shall subjoin a short summary of two, which occurred in the gaol of Newgate, the week after Master M.'s death. A female, aged 40, relapsed after convalescence from fever; complained much of pain in the abdomen, and had but little cough. The other patient a male, aged 28, after a perfect convalescence from fever, (towards the close of the great epidemic,) was dismissed from hospital on the 30th December, and returned to it moribund on the 3rd January; he died the same evening. He did not complain the day preceding, and his illness was noticed in consequence of his raving that night. On the 3rd his respiration was most laborious; his pulse full and hurried. The inner coat of the small intestines was inflamed; a sanguineo-serous effusion in the substance of the lungs; there were old and recent adhesions, but no effusion into the cavity of the thorax; about an oz. of serum in the pericardium, and large firm polypi in the ventricles of the heart and great vessels.—Similar appearances were observed in the female, with this difference, that part of the right lung had been inflamed, was hard and heavy, and contained purulent matter. She had besides a large, hard, and round calcu-

“ nations (seven in number,) having taken place before I could carry “ it fully into execution.”—“ *L'histoire de la nature*,” says Senac, “ a ses fables comme l'*histoire des etats* : mais ce qui parait fabuleux “ ne l'est souvent qu'aux yeux de l'ignorance.” Further to illustrate this subject, I may refer to the singular details that are to be found in the *Philosophical Trans.* No. 464, p. 123, of a number of sailors who died of polypi of the heart, after returning from a hot climate to England, in the severe winter of 1742; the paper is drawn up by Dr. Huxham, whose authority few will call in question.

lus, which filled the gall-bladder, and is now in Doctor Montgomery's possession. From the peculiar phraseology employed by me in noting the pulse in some of these cases, I now more than suspect that closer attention would have discovered that striking sensation imparted by the pulse, which so strongly characterised the existence of polypi in the instances of Miss R. and Master M. It must be confessed, however, that these instances, though so remarkable, are too few upon which to ground a positive diagnosis, more especially as à heart, diseased in other respects, is likely to modify the influence that must otherwise be exercised by polypus concretions on the state of the circulation.

Senac, anxious to ascertain a diagnostic sign indicative of polypus, minutely analyses the effects it is known to produce, "pour voir s'il n'y en a pas quelqu'un qui soit "particulier." He states these effects to be, 1st. A sense of weight or oppression in the region of the heart, often with a sensation of pain, sometimes "un dechirement "plutot qu'une douleur." 2d. Palpitation. 3rd. Inequality of the pulse: "cette inegalité sera d'autant plus "marquée, que les polypes pourront avoir divers mouve- "mens: de plus la substance de ces concretions peut ceder "et changer un peu de figure: ces changemens doivent "necessairèment varier les pulsations des arteres: *on voit* "par la que de tous les effects que produisent les polypes, "il n'y a que l'inegalité variable de pouls qui puisse nous "faire soupçonner qu'il y a dans le cœur des concretions "polypeuses." Though not very fortunate in selecting this as a general diagnostic sign, he proceeds to state,

that when the concretion is in the right auricle or ventricle only, the respiration is not much affected, for the course of the blood is free through the pulmonary vessels, "mais des polypes dans l'oreillette gauche, dans son ventricule, ou dans l'aorte, ils doivent nécessairement troubler l'action des poumons, et causer des crachemens de sang; et les effets de ces polypes s'étendent non seulement sur les poumons, mais encore sur le ventricule droit et sur son oreillette."

Bertin, whom I have already mentioned as the latest French writer on diseases of the heart, after citing Laennec's diagnosis, says, "nous ajouterois que c'est peut-être à la présence momentanée d'une concretion polypeuse dans quelqu'une des cavités du cœur ou dans leurs orifices qu'il faut attribuer *le bruit de soufflet* que l'on observe chez quelques individus, mais seulement par intervalle. Cette sorte d'intermittence annonce un obstacle mobile et temporaire, et empêche qu'on ne le confonde avec le bruissement continu qui accompagne les retrecissements permanents des orifices." To this doubtful conjecture he adds a still more doubtful assurance, "que les concretions sanguines très anciennes et même déjà organisées constituent des obstacles permanents à la circulation, et que leurs effets sont *absolument* les mêmes que ceux des retrecissements des orifices du cœur, c'est à-dire un étouffement considérable, l'anxiété la plus intolérable et l'infiltration générale." With equal decision he pronounces, "nous nous sommes convaincu que l'inflammation des vaisseaux et l'interruption ou la gêne considérable du cours du sang dans leur canal

“ etaient, si non les seules, du moins les deux principales causes qui determinaient leur formation.”

P. S. February 18th.—I had yesterday, as I thought, here brought this subject to a close; having however, been for some days past in vain search of a case, referred to by John Bell, as detailed in Simmons' London Medical Journal, I was at length so fortunate as this day to find that journal, in the extensive and valuable library of our College of Surgeons. John Bell, incredulous as he appears to have been relative to polypi of the heart, refers in a note to the melancholy and affecting story of Mr. Holder, as, “liker this disease than almost any other.” Such a reference under such circumstances, made me anxious to peruse that story—its perusal left me little cause to regret the previous trouble. The case is given in the 3rd part of the Journal for the year 1785, and is detailed at some length, and with much ability, by a very eminent and well known surgeon of that period, Mr. Cheston, of Gloucester. I subjoin a very short sketch.

Mr. Holder was a surgeon-apothecary, in extensive and laborious practice, and had for four years before the fatal termination of his malady in 1775, experienced occasional pain and distress in the thorax on any great exertion—“of late however (i. e. a few months before death,) his pain extended farther into the right side and upwards towards his neck, where he was constantly sensible of “a noise,” similar to that of “a stream of water passing over obstructions, or forcing a passage through a narrow confined place.” The gushing noise in the thorax became so strong and loud, that he often expressed his

surprise at its not being heard—the pain at times was very great, and greatest when noise was least.—“That gush, “he used to say, was his friend: while gush stood by “him, he should live.” Pressure on the carotid artery relieved the noise, but it produced encrease of pain. The pulse was hard and contracted, without the least intermission, and what was singular, the motion of the heart was not to be felt, though repeatedly searched for.—Having sustained a severe bilious attack, he experienced some remission of pain, and the apex of the heart was felt after it. As his strength declined, he found himself much more at ease by continuing almost constantly in an horizontal posture; he had good and bad nights with some regularity—on the latter, the motion of the heart was so languid, that he could not vary his position without the greatest caution; unless this was attended to, the circulation became confused, and, as it were, wholly carried on in one corner of the heart, which, at such times, beat with a “whizz.” I omitted to mention that there was also “noise in the ear like dashing of water.”

On dissection, the right auricle was found much enlarged and very thin, “with strong marks of inflammation,” and the right ventricle nearly transparent. On opening them they were totally void of blood, and “a “considerable quantity of air rushed out.” At the upper part of the right ventricle from between the columnæ carneæ there arose a broad concretion, adhering firmly to the columnæ, about the thickness of half-a-crown, of a light yellow colour, very dense consistence, and occupying about two-thirds of the diameter of the cavity—then

it rose into the auricle, and thence nearly four inches into the vena cava superior, one into the inferior, and also into the pulmonary artery; the branches not so firm as the main body. Another small concretion of darker colour, and more tender consistence, arose from the columnæ carneæ of the left ventricle, passing into the aorta about $1\frac{1}{2}$ inch.

Mr. Cheston concludes the case with some valuable observations on polypi of the heart, and mentions that in two instances he had met where the peculiar symptom of "a noise in the ear like the dashing of water," had been strongly described by the patients, he had afterwards found a firm concretion in the right ventricle; we cannot, therefore, he adds, but be strongly impressed with that noise, Mr. Holdon seemed so sensible of, and in considering how far it should be attended to as a diagnosis, &c. we have the strongest reason to infer, that the concretion was the source of those unhappy sensations; especially when we recollect "the noise so remarkable in aneurismal varix, " as well as that described by patients under arterial dilatation, in which coagula are generally met with."

Allan Burns however, who, in his valuable little treatise on diseases of the heart, has made some judicious observations on polypi, though believing firmly that these concretions are sometimes formed a considerable time before death, yet adds, that they are "seldom found except in hearts otherwise diseased." While they are "progressively on the encrease, they are insidiously adding to the danger of the primary disease, exasperating the general symptoms, but seldom productive of any single

“ symptom so well defined, as to be considered characteristic of the affection.” He therefore differs from Mr. Cheston in his view of Mr. Holder’s case, which, “ instead of being a case of polypus, appears to him nothing more than a description of the usual consequences, resulting from imperfect action of the valves;” the concretion itself he considers as only symptomatic of a more serious affection of the heart—and the noise “as of the rushing of water,” as a proof that the case was nearly similar to one (described in his preceding chapter,) in which the mitral valve was indurated and reticulated, and the right auricle enlarged. In that case there was “a jarring when the ventricles contracted, and when the hand was laid on the side, it resembled the feel of a varicose aneurism.” The patient had unusual palpitation, jarring sensation, and “hissing noise, as of several currents meeting; the sound was frequently audible; the pulse did not correspond with the action of the heart; it was feeble, yet the contraction of the artery was made with rapidity.”

Though no polypous concretion existed in this case, as in Mr. Holder’s and in the two already detailed, there is, notwithstanding some striking differences, a remarkable coincidence in some of the sensations imparted. A short review of the points of difference and agreement may lead to useful results. In the instances of Miss R. and Master M. (more particularly the latter,) the disease was of short standing and of acute character; their hearts, independently of the polypi, otherwise scarcely diseased. In Mr. H.’s case, the whole disease was of a very chronic cha-

racter, and the parietes of the heart, independently of the polypus, were highly diseased and weakened. There was however, no affection of the valves, except as mechanically influenced by the polypous concretion; whereas in Burns' case the mitral valve was diseased, and the right auricle enlarged; but without any polypus. Now in these several instances, however dissimilar the morbid state, one consequence must have followed, similar in kind, though it may have differed in degree: and that consequence was this, that from the obstructed state of the valves, arising whether from their own diseased state or the intrusion of the polypi, there must, on each contraction of the ventricles, have been a regurgitation of blood into the auricles, and thence into the pulmonary veins or the cavas.—“This “regurgitation of the blood, as Burns observes, must “have produced the jarring sensation, and also the hissing noise, as of several currents meeting.” Hence the “whizzing” sound, and other noises and sensations detailed in Mr. Holder’s case, *some* of which will also be found in those of Miss R. and Master M., both of whom, be it remembered, were too young and inexperienced minutely to remark, analyse, or accurately describe their sensations, whereas Mr. H. was professionally, and as an adult, well qualified for such a task—yet in both the heart and pulse responded in a manner singularly analogous; there was “a thrilling, whizzing sensation imparted to the finger by every artery with the same rapid action, “as of a fluid rushing through a tube it did not fill.” In Miss R. there was a strange rumbling noise as from the stomach to the throat, and Master M. complained of the

“noise in the ears.” Thus the analogy, if not complete, (for under their very different circumstances it could not be so,) is, in several respects very remarkable. As to the points of difference, it is to be noted, that in Burns’ case the “jarring sensation and hissing noise” were, as might be expected, confined to the heart, and hence the special diagnosis of the valvular affection that existed; whereas in Mr. Holder, the heart’s action was from the diseased state of its parietes, scarcely perceptible, and the noise was evidently confined to the great arteries, as would appear from the influence of pressure on the carotids in stopping the sound. How far Miss R. and Master M. were conscious of similar sensations, ’tis now impossible to decide—the impression on my mind is that they were, though reluctant or unable *spontaneously* to describe them—a *circumstance* the more to be regretted, on account of the singular similarity of the polypous concretions in Miss R.’s case, and that of Mr. Holder, though in different ventricles.

Having thus submitted all the material facts and illustrations of these singular cases to the judgment of the reader, I shall leave him to decide on their precise character, and draw his own inferences, being myself unwilling to deduce any positive conclusions from data so few in number. I have formed an opinion no doubt, and would hope that future experience, whether of my own or others, will establish or refute it. After an attentive perusal of the facts adduced, I may at least venture to ask whether we can *now* agree with Burns, when he says that “we have great reason to doubt, whether a case of

idiopathic polypus of the heart has ever occurred," or with the Dict. des Sciences Med. when it states, " que nous ne possedons dans l'etat actuel de la science aucune ensemble de symptômes qui denote la presence des concretions polypiformes dans le cœur : ceux qui existent, lors de leur presence, appertienent également a d'autres affections, surtout aux lesions organiques de ce viscere, et ne permettent pas par consequent d'établir le diagnostic assuré de cet etat pathologique."

Still though I may have failed either in giving an idiopathic character to the disease, or in establishing a sure diagnostic of its existence, I am at least warranted in indulging the hope that I have contributed somewhat to gratify the anticipations of the sagacious Cheston, who, after detailing the case of Mr. Holder, says, " thus far I have ventured to call forth the attention of practitioners to future observations on this subject, and shall at present only add my wish, that the circumstances now produced may rouse up further inquiries into a complaint of no small consequence, and which, I am strongly persuaded, observers will hereafter not only fully identify, but give a satisfactory explanation of."

WILLIAM HARTY.

MEDICAL REPORT
OF THE
HOUSE OF RECOVERY
AND
FEVER HOSPITAL, CORK-STREET, DUBLIN,
FOR THE YEAR 1829,
BY
JOHN O'BRIEN, M.D.

VICE-PRESIDENT TO THE KING AND QUEEN'S COLLEGE OF PHYSICIANS IN IRELAND, PHYSICIAN
TO THE HOUSE OF RECOVERY, AND FEVER HOSPITAL, CORK-STREET, DUBLIN,
&c. &c.

METEOROLOGY.

A late learned traveller in Ireland (Mr. Wakefield*), notices the general neglect of meteorology which prevails in this country, and states that we are far behind our English neighbours in our attention to this subject. The censure, I fear, falls with peculiar weight on the Medical Profession, with whose art this department of natural science is intimately connected. The majority of those

* Statistical Account of Ireland, vol. i. p. 91.

diseases which prevail sporadically among mankind, owe their origin to the vicissitudes of the weather, or to the influence of season and climate: even epidemic diseases are now generally believed to arise from a noxious principle diffused through the atmosphere, to which the term *Malaria* has been applied, sensible only in its effects on the health of man; but the study of whose phenomena and laws properly belongs to the science of Meteorology. This study, therefore, is one of paramount importance to the physician;—and we trust that the rising generation of our Profession will prosecute it with more zeal than their predecessors, and thus wipe away the reproach of negligence and ignorance, which stings only when it is deserved.

The only meteorological tables we have seen published for several years, in Dublin, have been furnished by the industry of Dr. Orpen, whom it would be unjust not to except from the censure above mentioned.

The general characters of the seasons of the year 1829 were as follows:—

The spring was colder than usual, and marked by the prevalence of the north and north-west winds. Catarrh and intermittent fever were the prominent diseases of the seasons: the latter being prevalent to an extent unknown for several years.

The summer was also cold, and distinguished by the prevalence of inflammatory diseases of the chest, and intermittent fever; the latter, however, to a less amount than in the spring.

The autumn was temperate, but rather cold, and was

not rendered remarkable by the prevalence of any of the ordinary autumnal diseases, as cholera, dysentery, intermittent fever, &c.

The winter has hitherto, (February, 1830,) been severe and inclement beyond the usual average, and has been attended by high winds from the north, the east and south-east, and with a surplus of frost and snow when compared with former years. The consequence has been a considerable increase in the admissions to this hospital; but the increase consisted principally of those febrile diseases which are palpably referrible to cold and the inclemency of the season, as inflammatory complaints of the chest, diarrhea, dysentery, &c.

The author is unable, from accident, to include the month of January in his subjoined meteorological table, which did not commence until the 1st of February, 1829.

As the insertion of the whole diary would swell the table to an inconvenient size, he has only included the average heights of the thermometer and barometer for each month.*

CONTINUED FEVER.

Statistics of Fever.

In the annual report of this hospital for the year 1826, it fell to the present author's lot to describe the formidable epidemic fever which during that year prevailed in

* For table see Appendix.

Dublin, the most extensive, as to numbers, which had ever previously visited this city. On this occasion it was computed that fifty thousand persons, that is, about a sixth part of the whole population, had been involved in the general calamity, and suffered attacks of fever, of whom from three to four thousand died.

Since that period a revolution not unusual in epidemic maladies, and similar to those which mark the vicissitudes of other great natural phenomena in which extremes often follow each other in rapid succession, has occurred with respect to fever in this metropolis. Not only has this disease fallen below its ordinary numerical standard, but at particular moments, it appeared to be altogether evanescent and extinct. On several occasions the number of cases of typhoid fever in this hospital, did not exceed half a dozen, and I have reason to believe, that a few occasions occurred, on which not a single case of typhoid fever was to be found in our wards.

The etiology of fever, we mean that part of it which comprehends the remote causes, is a subject claiming our attention, not merely as a medical or philosophical question, but as one of paramount national importance. We feel, however, that this department of our subject is still involved in too much obscurity to permit a hope that any profitable result could be derived from its investigation, within the circumscribed limits allotted to this report; indeed, the Author's opinions have been already so fully expressed on this subject in former reports, that he thinks it unnecessary to dilate further on it here. There is one fact, however, which he thinks it important to notice, and which, he conceives to be a decisive refutation of that

opinion, which would attribute the generation of epidemic fever to the sole and exclusive agency of public distress and famine;—namely, that during the period of epidemic intermission, if we may be allowed the phrase, just now described, when this disease had nearly disappeared from amongst us, public distress and suffering had never previously, perhaps, attained to so great a height in Dublin. This unhappy state of things is so well authenticated by repeated public meetings, and repeated claims on public charity, that it would be quite superfluous to offer further proofs of its existence. It is well known that the great mass of the humbler population in the district immediately contiguous to this hospital, and from which its wards are principally supplied, have, after suffering the most afflicting distress, been fed for months back from the scanty gleanings of public charity. The author, however, is far from denying the powerful agency of want and misery in generating epidemic fevers; he has ever regarded those evils, in conjunction with certain moral habits, which he looks upon as their natural and inevitable consequences, to be the chief, *the great*, he would say it emphatically, *predisposing causes* of fever in this country; but he holds the opinion that these evils alone are incapable of generating continued fever in any individual instance, much less in its epidemic form; and that to produce this effect, the combined agency of another set of causes, which, in medical language, we call exciting causes, is indispensably necessary. This latter class of causes will operate with tenfold effect upon an impoverished and enfeebled multitude, when present, but when they are absent, we are instructed by the events of the past year, distinguished at

once for an extraordinary immunity from fever, and extraordinary public distress, that want and misery are incapable of themselves, of producing epidemic fever.

The following Table exhibits the total of admissions, discharges, and deaths, from 1st January 1829, to 1st January, 1830.

Month.	ADMITTED.				Total Discharg- ed cured.	DIED.		
	Males.	Females.	Total.			Males.	Females.	Total.
January	98	199	297	216	16	16	26	
February	94	177	271	248	12	9	21	
March	122	207	229	264	11	24	35	
April	118	195	313	308	8	14	22	
May	113	187	300	360	9	6	15	
June	85	124	209	183	6	7	13	
July	88	140	228	214	6	5	11	
August	70	101	171	193	5	6	11	
September	85	137	222	184	7	6	13	
October	69	142	211	186	7	11	18	
November	73	184	257	212	4	7	11	
December	99	246	245	268	12	24	36	
Grand Total . . .	1114	2039	3153	2836	97	135	232	

Mortality for males 1 in 11
 for females 1 in 14
 Total mortality 1 in 13.22

The records of this hospital furnish evidence that the mortality has never increased regularly in proportion to the admissions ; but on the contrary, when the admissions have been most numerous, the relative mortality has, generally speaking, been least. Thus, in the three great epidemic fevers which occurred in Dublin, in the course of the last twenty years, the mortality in 1815, was 1 in 20 ; in 1818, 1 in 30 ; and in 1826, 1 in 28 ; while in the three years 1823, 1824, 1825, which present a considerable reduction in the admissions, the total mortality was 1 in 11 ; and in the two past years, 1828 and 1829, in which the admissions were also much diminished, the total mortality was 1 in 14.

The inference from this fact is, that the majority of cases which constitute our epidemic fevers, are of a mild character, a dispensation by which Providence interposes to mitigate the severity of its own inflictions.

We are indebted to Dr. Hawkins, author of a Treatise on Medical Statistics, for some valuable information on the subject hospitals, and their relative mortality ; and the following remarks are so apposite to our present purpose, that I cannot forbear inserting them here.

“ The principal end of hospitals, is the relief of the
“ sick poor, but another benefit may also be derived from
“ them, an abstract of their multiplied experience ; with-
“ out this their utility to our profession, as a source of
“ information, is greatly abridged ; such reports not only
“ tend to improve the economic arrangement of hospitals,
“ but also collect and accumulate a store of evidence on
“ the history of diseases, which can scarcely be acquired
“ in the most extensive private practice.”

The author fully concurs in the sentiments of Dr. Hawkins, and cannot help expressing his surprise and regret, that annual medical reports are not published by the London fever hospital; or, if published, are not more generally circulated: there is little doubt, from the favorable position of that hospital in the capital of the empire, and from the advantages enjoyed by its physicians, that many important facts would thus be communicated to the public. It appears by the testimony of the writer above mentioned, that the mortality in the London fever hospital, has varied for some years back, from 1 in 5 to 1 in 7,* which is

* After a considerable part of this Report was written, the valuable treatises on fever, recently published by Drs. Swith and Tweedy, both physicians to the London fever hospital, have been received by the author, which render the remarks in the text wholly unnecessary. From Dr. Tweedy's work, he extracts the following statement of the mortality in the London and Manchester fever hospitals, to which he shall add the mortality of the Cork-street hospital for the same period:—

Year	one in	London Mortality.	Manchester Mortality.	Dublin Mortality.
1816		11.8	—	15.30
1817		12.25	—	15.94
1818		5.75	11.75	30.5
1819		6.72	9.5	17.6
1820		9.97	8.25	14.64
1821		5.04	8.0	12.7
1822		6.18	7.	16.92
1823		6.11	6.33	11.71
1824		6.0	6.83	12.13
1825		5.1	6.4	10.17
1826		5.34	6.66	28.5
1827		7.25	9.86	19.13
1828		7.22	10.25	15.35

In the last epidemic fever which prevailed in Edinburgh, from November 1826, to June 1827, the mortality in the infirmary and fever hospital of that city was 1 in 10.33. *Ed. Med. and Sur. Journal, April, 1830.*

more than double the mortality of Cork-street hospital for the same period, a difference very considerable indeed, but which, I have no doubt, might be explained by local circumstances, with which we are at present unacquainted ; and it is probable that those circumstances operate more powerfully than any difference of type, which may exist between the fevers of both cities.

In St. Thomas's hospital, London, the mortality for a period of ten years, among the physician's cases, according to Sir G. Blane,* has been 1 in 7 for males, and 1 in 10 for females. In St. George's hospital, the reports for 1825 and 1827 afford a mortality of about 1 in 9.† In the Royal Infirmary, Glasgow, the mortality from typhus fever, in the year 1827, was 1 in 9; the mortality from dysentery was 1 in 8 for males, and 1 in 10 for females.

In the great hospitals of Paris, Vienna, Berlin, &c. the

The reason assigned by the authors above mentioned for the high rate of mortality in the London fever hospital, is the advanced period of the disease at which patients apply for, and obtain admission. The neglect of an early application, however, is a subject of constant complaint in the Dublin, as well as the London fever hospital ; and we think this circumstance alone insufficient to explain the great difference of mortality in both hospitals. We believe the fact to be, that the proportion of very severe or bad cases to the aggregate of admissions, is greater in the London than the Dublin hospital : but whether this is to be attributed to the comparatively limited scale of accommodation in the London hospital, and the consequent exclusion of all but the more violent cases ; or whether the peculiar habits and modes of life of the lower classes in the British metropolis, palpably so different from those of the same class amongst us, do actually communicate a more dangerous and malignant character to the disease under consideration, we have not been able to decide.

* Blane, Medico-Chirurg. Transactions, and Select Dissertations.

† Hawkins, p. 80.

mortality has been still higher than in London, and the general inference we are warranted in drawing from the information communicated by Dr. Hawkins, is, that the mortality of Cork-street hospital has been less than that of any similar institution in Europe. This fact must prove highly gratifying to the physicians of this institution ; but it would be unjust, not to acknowledge also the services of the managing committee of governors, to whose vigilance, unremitting attention, and to the strict discipline maintained in the hospital, a considerable share of this happy result is to be attributed.

Dr. Hawkins is of opinion, that the three following are the leading causes, which influence the mortality of hospitals : *first*, national cause, or the state of society ; *secondly*, position, or the situation of the hospital ; *thirdly*, domestic economy ; of these it is probable the last is the most powerful.

The mortality in Cork-street hospital has considerably diminished since the first few years after the foundation of the institution ; thus, if we divide the whole time since the establishment of the hospital into three periods, the mortality in each will stand as follows :—

From 1804 to 1812, it was 1 in 12.

..... 1812 to 1820, 1 in 19.

..... 1820 to 1830, 1 in 18.

It would be a mistake to suppose that the mortality of this hospital arises solely, or even principally, from continued fever ; for, in fact, this disease constitutes but a small proportion of the mortality, except in the epidemic

visitations of the disease. The majority of fatal cases in the past year arose from the usual local phlegmasiae of the thoracic and abdominal viscera, among which acute and chronic bronchitis (the peripneumonia notha of former times,) and dysentery occupied, and generally occupy, the highest place; and a considerable number also died of the chronic diseases of those organs which passed from the acute to the chronic stage, either in the hospital or previous to admission.

The mortality of this class of diseases, is always considerably greater than that of idiopathic or simple fever; hence, when this class of disease predominates over fever, as it did in the year 1829, our mortality is considerably higher than when simple fever forms the ascendant disease. The best proof of this is, that during the prevalence of the two great epidemic fevers of 1818 and 1826, when all our cases were exclusively composed of pure fever, the mortality was not half so great as in the two past years, the mortality in 1818 being only 1 in 30—in 1826, 1 in 28.

The decrease which took place in the admission of fever patients to this hospital in the past year, as already stated, and the consequent abridgment of the time and labour of attendance, enabled the author to make daily reports of the most important cases of fever which occurred in his wards, and thus to adopt a mode of investigation more strictly analytical than that which the great influx of patients had previously permitted. A select number of those cases he shall now lay before the reader, for the purpose of illustrating his views both of the pathology and

treatment of fever ; his object in this inquiry was, to try the theories of fever which have been proposed in modern times by the most rigorous test of symptomatology. Every physician, we conceive, must acknowledge that the true and philosophical method of investigating the nature of fever, or indeed any other disease, is, 1st, by an accurate delineation of the symptoms during life, and 2dly, by dissection after death. On the comparative value of these two modes of inquiry there may be a difference of opinion ; —some, we believe, particularly among our Gallic neighbours, place the latter in the first rank of importance ; in this opinion, however, the author, though ready to admit the importance of morbid anatomy, cannot concur. In an acute disease of a protracted nature, like fever, in which new disorganisations and decompositions, both of solids and fluids, are perpetually taking place through its whole progress, morbid anatomy may discover the causes of death, but we think it incapable of developing the first cause of disease, and, in this respect, we think it inferior to symptomatology, as the means of investigating the proximate or essential cause of fever. Be this, however, as it may, the mode of investigation by the symptoms was the only one which was open to the author on the present occasion, as, unfortunately for the interests of medicine, post-mortem examinations are not permitted by the regulations of this hospital.

Before, however, we proceed to detail the cases above alluded to, we shall, in order to bring the object of investigation fully before the reader, take a summary view of

the principal theories on the pathology of fever, which have been proposed in modern times.

Theories of Fever.

The popular theory of fever at present prevalent in France, it is well known, is that of M. Broussais, whose opinions have been almost universally adopted by the active and zealous pathologists of that country, and have wholly superseded and extinguished the school of Pinel, at least in pyretology, which flourished for a quarter of a century previously.—“The ideas of this great physician,” says* M. Andral, “have been so widely spread and so universally adopted, that it would be useless to retrace them here; it only remains for us to judge of and discuss them.”

Although M. Croussais has unfortunately treated the medical writers of Great Britain with as little courtesy as candour, and there is a tone of egotism predominant in his works calculated to prejudice the English reader against him, yet his opinions involve a question of such paramount importance to mankind, that no minor considerations ought to deter us from investigating them thoroughly. To enter into an elaborate exposition of M. Broussais’s theory, which he calls “The Physiological Doctrine of Fever,” would be foreign to our present purpose; it is only necessary to state, that, in essence, it is contained in the following proposition, viz.: that idiopathic or essential fevers, of every kind, are nothing else, in

* *Precis d’Anatomie Pathol.* vol. ii.

their first stage, but inflammation of the mucous membrane of the stomach or small intestines, or of both ; and that its proper nosological place is among the phlegmasiæ, and its proper title gastritis or gastrio-enteritis. In accordance with this doctrine, more than one system of practical medicine have been recently published in France, in which this doctrine has been made the basis of a new nosological arrangement and nomenclature. It may also be remembered that a theory, similar in its general features, but differing as to the primary seat of disease, had been proposed some twenty years since, by Dr. Clutterbuck of London, according to whom the primary seat of inflammation is the brain itself; although Dr. Clutterbuck still continues to employ the terms simple and idiopathic fever, yet it is evident that the proper nomenclature of the disease, if his opinion be correct, is, phrenitis or cerebritis, and its proper nosological position among the phlegmasiæ.

It is proper also to state that a modification of the doctrine of M. Broussais has lately been proposed by the industrious pathologist formerly mentioned, M. Andral, which seems to unite the two theories just described ; M. Andral is of opinion that inflammation of the gastro-intestinal mucous membrane may be the exciting cause, the "point de départ," the first link in the chain of morbid actions, but that the disease essentially arises from a deranged state of the nervous system. He divides fevers accordingly into three great classes, viz. : those which proceed from lesions of a particular organ (symptomatic fevers) ; those which proceed from a derangement of the

nervous centres (typhus;) and those which proceed from too rich and inflammatory a condition of the blood itself (synocha;) thus admitting into his system a branch of the humoral pathology also.

We may here observe, that a modification of Dr. Clutterbuck's theory was proposed a few years ago by Dr. Mills of Dublin, according to which the local origin of fever is not limited to the brain and stomach only, but is extended to every other organ of the body essential to life, whose inflammation may thus become the rudiment or essential cause of fever.

According to those several doctrines, fever is merely a complex or abstract term, denoting the union of a certain aggregate of symptoms or deranged functions, which is to be considered as the type or external expression of a local disease;—hence all fevers are symptomatic, and differ merely in the intensity and extent of the local inflammation producing them.

Such, in brief outline, are the principal theories on the proximate cause of fever in our day, to which we must not forget to add, that some respectable physicians, both in this country and in Germany, where the school of Boerhave is not yet extinct, still adhere to what is called the humoral pathology of fever, which is virtually the same that was taught from the days of Hippocrates to those of Boerhave. According to this doctrine, the blood itself is the “*prima mali labes*,” and receives the first impression of disease, which is gradually communicated from this source to the whole mass, both solid and fluid. That alterations of a very marked and sensible character take

place in the blood and all the animal fluids in fever, is a fact well known to every physician who has ever treated the disease;—but the problem here is to prove, not the existence of those changes in the fluids, but the priority of their existence to all other morbid actions.

Before we close this sketch, it will be necessary to say a few words on the theory of fever taught by Dr. Cullen in England, and by M. Pinel in France, which, at least in their general principles, are the same, and which the doctrines above-mentioned are intended to supersede.

Dr. Cullen defines simple or idiopathic fever, to be “*pyrexia, sine morbo locali primario.*” This definition, if taken in a strict and literal sense, is not only at variance with Dr. Cullen’s own notion as to the proximate cause of fever, for he believed it to arise from irritation of the brain; but, we submit, is contrary to common sense; for, it appears impossible to conceive how any morbid cause, operating on the human body, could act, except by affecting parts in succession; and to say, that a general disease exists without a local primary disease, is to say, that a disease exists without a beginning or origin; the same observations will apply to the essential fever of M. Pinel. Against this point in the doctrine and definitions of his predecessors, M. Broussais has levelled all his artillery, both of argument and irony; and has introduced the term, “*ontologie*” or essentialism, to ridicule the absurd abstraction, as he conceives, contained in the term essential fever, *i. e.* a fever without a local origin. To complete and render intelligible, Dr. Cullen’s definition, it would be necessary to add the word “*evidente,*” *i. e.*

“ *pyrexia sine morbo locali primario evidente* ;” and we have no doubt, from what Dr. Cullen says in his “ *First Lines*,” that this was the sense, in which he intended the definition should be understood. According to this construction of it, we shall find the definition describing fever as a disease, which may have a local origin ; but that origin not perceptible to our senses, and unknown. Whether this be true or false, as a matter of fact, it will, at least, render the definition intelligible, and free from the charge of “ *essentialism*. ”

These things being premised, we shall now proceed to detail the cases above alluded to, in doing which, we shall adhere to the terms and nosological division of Dr. Cullen, in a general way. A late ingenious writer on Fever, (Dr. Burne,) it is true, objects to the term *typhus*, and recommends its rejection from pyreptic nosology, on the ground of its various and different applications by medical writers. The observation is certainly well founded, but we fear that every other term which can be suggested as a substitute, will be liable to the same objection. Thus, M. Pinel makes the *adynamic fever*, one of the species of his *essential fevers* ; whereas, Dr. Burne uses it as a generic, or ordinal term, to express the “ *essential fevers of the French writers, and the epidemic fevers of the Irish writers*. ” We can assure the learned author just mentioned, that the majority of cases, which have constituted any of the epidemic fevers which have occurred in Ireland, in our time, have been rather of the *synochoid* than the *adynamic* type. The true way to avoid confusion in the use of terms, is to adhere to their established defini-

tions, or to define them accurately, when employed in a new sense.

The author has just announced his intention of adopting the arrangement of Dr. Cullen, in a general way, and to explain this qualified adherence, it will be necessary to detain the reader a moment longer. It is well known to every medical reader, that Dr. Cullen entertained doubts whether he was justified in constituting his two last divisions of idiopathic fever, *typhus* and *synochus*, as distinct genera, and whether they should not, with more propriety, be comprehended under one genus. We believe, that most physicians, who have devoted their attention to the subject of fever, since his time, have participated in this doubt; and some, of the first authority, have rejected the division altogether, and united the two divisions into the genus *typhus*; and they have subdivided *typhus* into two species, the inflammatory and simple *typhus*, which correspond to the *synochus* and *typhus* of Dr. Cullen. The author confesses that he agrees in sentiment with those authors; he believes that the distinction between those divisions of fever arise from circumstances purely accidental, and not from any precise generic, or specific difference existing in nature; and that they are modifications of the same disease, growing out of those circumstances. The modifying circumstances appear to be, 1st, the strength or debility of the constitution, or powers of life in the individual who receives the infection; and, 2dly, the quantity or dose of the morbific material, whatever its nature be, which produces it. In a constitution naturally feeble, or in one exhausted and debilitated

by external causes, or by age, the reaction is feeble, and the synochoid period is accordingly, short-lived, indistinct, or evanescent; and thus, the exquisite typhus may be formed; again, when the constitution is vigorous, the frame athletic and youthful, the reaction will be energetic, and the synochoid period will be of long duration, and strongly marked. Similar modifications will arise out of different doses of the infecting material by which the disease is generated. Between those extremes a multitude of intermediate shades of type will exist, as there are various degrees of the modifying causes, which it will be difficult to reduce to either of the original genera.

Of this difficulty sufficient evidence will be found in the writings of authors who have treated of this disease, in the works of no two of whom a perfect accordance will be found, as to the nomenclature and arrangement of fevers. Further, in the synochus (*i. e.* synocho-typhus,) of Dr. Cullen, numerous varieties of type arise out of the different relative lengths of the synochoid and typhoid stages. In the short fevers of this country, as the five and seven-day fevers, and the ephemerae the typhoid stage is short, or altogether absent; while, in protracted fevers, the synochoid stage is of various lengths, but always much shorter than the typhoid. These endless varieties of type cannot, it is clear, be expressed by any two definite terms, but may, with less confusion, be comprised under a more general or ordinal term—the author shall accordingly adopt the term typhoid fever, to express every form of fever, of which typhus or typhoid symptoms form a part or the whole—which again he shall subdivide into two

species, the synochus or synocho-typhus and the perfect typhus. This division is not essentially different from Cullen's, but merely an expansion of it.

In the following cases, the period of convalescence is dated from the day on which the patient was allowed middle or full diet, that is, solid food.

CASE I.

Margaret Kitts, aged 21; admitted into Cork-street hospital April 4, 1820; was attacked four days before admission with head-ache, vomiting, and general illness; on being asked which of these symptoms made its appearance first, says she cannot recollect; thinks the head-ache. Now, (April 5th,) morning after admission, she is affected as follows: pulse is 100; tongue covered with dark white fur; red at tip and edges; epigastrium very sensible and tender on pressure; sickness of stomach remains, but she has ceased to vomit; severe head-ache and pain in lumbar region; conjunctiva not injected; expression of countenance languid; no petechiæ; skin of a yellowish hue.—*V. S. ad uncias x. Oleum ricini. Decoctum hordei acidul. Haustus salini efferv. sæpe per diem.*

6. Pulse 100; rather wiry; tongue white; four or five stools; complains more of general pains than of sickness of stomach; epigastrium still tender on pressure, even the slightest; no pain or soreness of abdomen; uneasy night and little sleep; no delirium; moans much. *V. S. ad unc x. Decoct. hordei. acidul.*

7. Pulse rather more frequent; no improvement; skin

dusky yellow. *Hirundines* xii. *epigastrio* (*scrobicul cordis.*)
Ol. ricini. Decoct. hordei acidul.

8. No improvement; leeches and oil operated well; tongue brown in centre to-day; intellect clear; no delirium; no sleep; epigastrium still tender, and rigid to the touch; pulse weak; five stools; skin deep yellow. *Cataplasma emolliens epigastrio. Decoct. hord. acidul.*

9. Epigastrium less painful, and softer than yesterday; says she is a little better, but complains much of lumbar pains; moans much; four stools. *Frictio lumborum cum linimento ammon., et tegantur lanulâ. Decoct hord. acidul.*

10. Little or no amendment; epigastrium still painful; intellect clear; no delirium; no stool. *Hirudines* xii. *epigastrio. Ol. ricini.*

11. Epigastrium less painful; pulse 120; no decided improvement. *Hirudines* xii. *epigastrio. Decoet. hord. acidul.*

12. Epigastrium less painful, and a slight amendment.
Fotus epigrstrii. Decoct. hord. acid.

13. Improving; little or no soreness of epigastrium on pressure; no sickness of stomach; pulse still frequent.
Decoct. hord. acid.

14. Much improved; complains only of weakness. *Pulv. rhei in aq. menthæ; fotus.*

15, 16. Much better; appetite returning.

17. Convalescent.

CASE II.

Margaret Duffy; aged 19; admitted April 25, 1826, sixth day of illness.

April 24. Feels severe pain of abdomen and epigastrium on pressure; no pain when pressure is not used; was bled yesterday, which was the third time since commencement of illness; blood not buffered; was attacked at the commencement of her illness by shivering and headache, which were the first symptoms; immediately after she felt soreness of epigastrium and abdomen, which has continued since; bowels moderately open, and no diarrhea.

Hirudines xii. epigastrio. Decoct. hord. acidul.

35. Leeches operated well; uneasiness of abdomen diminished; little or no head-ache at present, and intellect clear; pulse quick, but not hard; tongue white, loaded; one stool. *Pulv. rhei. gr. x. cum. tinct. rhei. semunc. ex aq. menthae. Decoct. hord.*

26. Had an attack of nausea and vomiting yesterday; pulse quick; tongue white, and red at point and edges; abdomen rather full and tender, though bowels are open. *Hirudines xii. abdomini. Decoct. hord. Enema purgans.*

27. Better, but pulse still quick, and tongue furred and red at edges. *Repet. haustus ex pulvere et tinct. rhei. Decoct. hord. acid.*

28. As yesterday; two stools. *Ol. ricin. Decoct. hord.*

30. No material improvement; oil operated three times. *Decoct. hord. acid.*

May 1. Pulse still quick; tongue as before; one stool; no great uneasiness of abdomen on pressure, but it is rather full. *Ol. ricin. Haust. salin. efferv. Decoct. hord.*

2. Nausea; vomiting; quick pulse; hot skin; has been also attacked by severe cough and slight pain of the chest. *V. S. ad unc. viii. haustus efferv. saepe.*

4. Blood not buffed, but contains little serum; symptoms a little mitigated. *Haustus ex pulv. et tinct. rhei. Fodus abdominis.*

5. Still pulse quick and hard; skin hot; had a return of nausea and vomiting yesterday. *Hirudin. xii. epigastrio Decoct. hord. Fodus abdominis.*

6. Nearly as yesterday; still nausea and occasional retching. *Hirudin x. abdom. et postea, idonea intervallo empl. vesic. abdomini quâ dolet. Enema purg.*

7. Leeches and blister operated well, but little amendment; pulse less frequent, but weak; intellect unaffected. *Opii semigr. calomel g. ii. pilul. bis. in die; Enema purg. fot. abdom.*—Pills were continued to the

11th, on which day an amendment was perceptible; the patient slept well; had no nausea or vomiting, and pulse and tongue were improved; gums were not affected.—*Pills discontinued.*

12. Leeches and pills repeated; had a return of vomiting yesterday.

13, 14. No vomiting; symptoms improved, but no decided change. *Repet. pilulæ. Ol. ricin. cum. tin. rhei. Fodus abdom.*

15. Slight soreness of gums to-day from the pills; she is better.

16. A slight return of retching last night. *Pulv. rhei. g. x. magnes. g. x. in aq. menth.*

June 2. The report is as follows: pulse still quick and weak (120); no vomiting, or pain of abdomen on pressure; complains of cough and pain of chest since 31st May. *Empl. vesic. sterno. M. pector. cum tinct. opii.*

At this period a change of physicians having occurred, this patient was handed over to my successor; her disorder was now purely pulmonary, the gastro-enteritic symptoms having been entirely removed. Under this she continued to labour for a considerable time longer, and was not discharged from the hospital until the 14th of July, 1829.

CASE III.

Margaret Somers, aged 22, admitted April 24th, 1829.

April 25. Complains of pain in right hypochondre and cough; pulse quick; tongue covered with white fur; bowels confined; dry "rale sonore" audible by the stethoscope; respiratory murmur distinct on right side of chest as well as left. *Hirudin. xii. margini costarum inferiar. dextro. latere. Ol. ricin. cum tinc. sennæ. Mist. expectorans.*

26. Epigastrium and right hypochondre less painful and sensible to the touch; still some cough, without expectoration, and her respiration is laborious; dry "rale sonore," and respiration on right side of chest rather indistinct; pulse and tongue as before. *V. S. ad unc. x. Decoct. hord. acid. Haust. eff. sæpe.*

27. Improved; respiration good; declares she feels no pain; pulse soft and less frequent; tongue improved;

cough still distressing ; bowels confined. *Ol. ricin. Repe-tantur cætera.*

28. Cough has been very distressing, and she complains of sore throat and difficult deglutition ; no pain of chest or side ; pulse quicker to-day ; skin hot ; tongue white ; dry “rale sonore” still predominant in chest ; no pain of abdomen on pressure ; hoarseness. *Hirudines x. parti supe-riori sterni et inferiori colli. Mist. pector. Pulv. antimon. cum calomel vesper. Decoct. hord.*

May 1. Continues nearly as yesterday ; cough and sore throat distressing ; still hoarse, and voice inaudible. *V. S. ad unc. viii. Mist. pector. Empl. vesic sterno. Ol. ricin.*

May 2. Voice more audible ; blood not buffed, but the coagulum fills the cup, and there is but little serum ; pulse quick and rather hard ; countenance is stupid, and it is with difficulty she is made to answer ; on being roused, declares she feels no pain ; respiration laborious, and the “rale sonore” very loud in lower part of sternum by the stethoscope ; respiration dull on right side of chest ; pulse 100 ; bowels free ; f. t. stools. *Tart. emet. g. i. in aq. distillat. unc. i. st. om. hor. ii.*

3. Stomach made a little sick by the tart. emet. but it neither produced vomiting nor purging ; respiration and the other symptoms continue as before ; bowels confined. *V. S. ad unc. x. Ol. ricin.*

4. Blood not buffed, but little or no serum ; it is of a florid red colour ; voice is again lost to-day ; husky cough ; laborious respiration ; loud “rale sonore ;” pulse quick and weak ; patient on the whole is weaker, and not im-

proved; bowels free. *Empl. vesic. amplum sterno. M. pectoral. Mist camphor, cum spir. ammon. arom.*

5. Voice has returned; tongue loaded and brown in centre; she tore off blister during the night; she slept, however, a good deal, but in an uneasy and semicomatous state without delirium; on being roused, answers that she is better, and says she feels no pain; abdomen rather tumid, but not painful on pressure; no stool. *Ol. ricin. cum tinct rhei. Fosf. abdom. Haust. sal. efferv. saepe.*

6. Got some uneasy sleep, but on the whole no material amendment; epigastrium and abdomen soft and without pain; cough distressing, and respiration laborious; bowels open. *Empl. vesic. inter scapulas. M. pector.*

7. Voice is distinct to-day, but pectoral disorder is not diminished; she had some delirium during the night, and her tongue is dry and brown; bowels rather confined; one stool. *Ol. ricin. Mist. camphor. Decoct. hord. acid.*

8. A slight amendment perceptible to-day; respiration less laborious; countenance improved; lies on her back, with knees elevated; no pain or tension of abdomen; four stools. *Mist. pector. Mist. camphor cum sp. ammon. arom.*

9. Very uneasy last night; attempted to get out of bed two or three times; respiration rather more laborious than yesterday, and on the whole rather worse; three stools; cough was not very distressing; and abdomen free from pain; tongue still dry and brown. *Ol. ricin. cum tinct. rhei. Haust. efferv. Mist. camphor. Decoct. hord.*

10. A marked amendment to-day; slept without delirium; and made no attempt to get out of bed; understanding much clearer; and countenance more natural;

three stools. *Mist. camphor. cum sp. ammon. arom. Mist. pector.*

11. Better; slept well, without delirium; lies on back, with knees elevated; bowels free; respiration still rather laborious; but less than formerly. *Mist. camphor cum sp. ammon. arom. Mist. pectoral.*

12. Is going on well; slept well; and is slowly improving. *Cont. medicam.*

13. Much better; her cough and pectoral distress are disappearing; tongue has lost its brown tinge, and is moist; her appetite is returning; she requests solid food.

15. Convalescent.

CASE IV.

Mary Rogers, aged 50; admitted December 15, 1829; sixth day of illness.

She is extremely feeble and emaciated; prominent symptoms are, extreme soreness and pain of epigastrium, even when no pressure is used; retching; brown and dry tongue, with frequent and feeble pulse; intellect, however, is clear and unaffected; no head-ache, and says her only pain is that in her stomach and bowels.

18th and 19th. Twenty leeches applied each day to epigastrium, with considerable benefit; but epigastrium continues still sore and rigid; skin of a dark yellow hue.

20th. Leeches repeated, with a mustard poultice to epigastrium. *Subcarb. magnesiæ internally, and an enema.*

21. A slight amendment. *Pills of rhubarb, Dover's powder, and blue-pill.*

25. Is much better; tongue cleaner; pulse less frequent; retained a little rice and milk on her stomach.—
Pills continued.

28. Gradually but slowly improving; her gums a little tender to-day; and pills discontinued.

Henceforward this patient was treated merely by regulating the bowels by gentle laxatives, and allowing a light diet of milk and rice. Her recovery and convalescence were slow and tedious; she was discharged cured on 20th January, 1830.

CASE V.

Mary Reilly, aged 26; admitted April 14, 1829; a servant; a native of Dublin; day of attack uncertain. Pulse is frequent (104); tongue covered with white fur; complains chiefly of general muscular pains; head not much affected; abdomen tumid, and sore on pressure; bowels constipated; face flushed, and skin hot. *V. S. ad unc. x. Calomel et extr. col. comp. Haust. efferv. Fot. abdom. Decoct. hord.*

15. Blood very serous; coagulum buffed and cupped, and small in bulk; tongue furred and white; pulse reduced in frequency and in volume; says she is not better; no sleep last night; abdomen still tender on pressure; skin hot; four or five stools. *Rad. capill. et lav. caput. acet. diluto. Decoct. hord. acid.*

16. Petechiæ visible on the skin to-day; pulse rather fuller; epigastrium still tender on pressure; complains

still of general pains and soreness of body; one stool. *Ol. ricin.* *Decoct. hord.*

17. Complains of distressing cough to-day, and pain of chest; pulse frequent; tongue white in centre, pale red at edges; petechiae in increased numbers; abdomen still tender on pressure. *Cucurb. cruent. sterno, et abstr. unc.* *viii. sang.* *Mist. pector.* *Fot. abd.*

18. Pulse rather less frequent, but weaker; cough has been rather distressing, with dull pain of chest; soreness of epigastrium and abdomen diminished; “rale sonore” is heard by the stethoscope; respiratory murmur rather indistinct on right side of chest; moans much, and has the typhoid aspect; two stools. *Empl. vesic. sterno.* *M. pector.* *enema purg.*

19. Chest much relieved; respiration distinct and easy; slight “rale sonore;” bowels open. *Mist. pector.* *Mist. camphor.*

20. Pulse frequent and weak; epigastrium and abdomen free from pain on pressure; chest also free from pain; slight cough only; skin speckled with petechiae of a purple colour; countenance stupid and languid; but she answers distinctly; moans much; but says, she cannot point out any particular seat of pain; tongue furred, white; two stools dark coloured. *Mist. camphor. cum sp. ammon. arom.* *Enema purg.* *Decoct. hord. acid.* *Haust. eff. sæpe.*

21. A slight improvement to-day; but abdomen more tender on pressure than yesterday; says, however, she feels no distinct pain; intellect clear; sleep uneasy and

interrupted; says she is better; bowels not free. *Ol. ricin. cum tinct. rhei. Haust. eff. sæpe.*

22. Improving; but still moans much; abdomen sensible to pressure; four stools; and passed a little blood. *M. camphor. Decoct. hord. acid.*

23. Nearly as yesterday; but abdomen more tympanitic; still moans constantly, without being able to specify any particular seat of pain; petechiæ begin to disappear. *Ol. ricin. cum tinct. rhei. H. eff. sæpe. Decoct. hord. acid.*

23. Improved; slept quietly last night; moans less; a little blood still in her discharges; bowels sufficiently free. *Decoct. hord. cum gum Arab. solut. Haust. efferv. sæpe.*

25. Pulse rather fuller to-day; much moaning; two stools, tinged with blood; had some delirium during the night and morning. *Hirudin. x. hypogastrio. Ol. ricin. cum. tinc. rhei. Repet. cætera.*

26. Improved to-day; says she is better; a little blood still in her evacuations. *Decoct. hord. gummos.*

27. Much better to-day; asks for food; a little blood still in her discharges.

28. Convalescent.

CASE VI.

James Boylan, aged 14; admitted April 3, 1829, was attacked about seven days previous to admission, with head-ache, chilliness, and general illness; his father had been previously ill of fever, and is now in the hospital; his symptoms now, (April 4, morning after admission,) are as follows:—Pulse about 100, rather full; skin hot;

tongue furred, and white; edges pale red; says, he feels no head-ache at present; but his face is flushed; conjunctiva not injected; eyes nearly natural; no pain of epigastrium or abdomen on pressure; abdomen full, but not tympanitic. *V. S. ad unc. viii. Ol. ricin. cum tinct. sennæ.*

5. Better in all respects; five stools; skin cooler than yesterday; tongue still furred, and white; blood drawn from his arm not buffed; serum of a greyish colour, abundant; crassamentum small in bulk. *Decoct. hord. acid.*

6. Face flushed; tongue brownish in centre, white at edges; bowels remain relaxed; four or five stools, thin yellowish; skin hotter than yesterday; eyes more animated, but not injected; no delirium; slept pretty well. *Decoct. hord. Lavatio frig. capit. et membror. Rad. capell.*

7. On the whole improved this day; no head-ache, nor pain of abdomen on pressure. *Decoct. hord. acid.*

8. Continues to improve; tongue moist, and less brown in centre; bowels relaxed: three or four stools. *Decoct. hord. acid.*

9. Improving; declares he is better; still a brown spot in centre of tongue; bowels open; but no pain. *Decoct. hord. acid.*

10. Improving.

11. Begs for solid food.

12. Convalescent.

CASE VII.

Margaret Edwards, aged 25. Admitted into Cork-street hospital April 2, 1829; ninth day of illness. She is an English woman, the widow of a soldier; has suffered great distress, and was latterly an inmate of the Mendicity Institution. A child of hers died lately in the hospital of cancer of the mouth. Her symptoms this day (April 4th), are as follows: pulse 120; tongue dry and brown in centre; great prostration of strength; no pain of epigastrium or abdomen on pressure; no pain of head, but says she felt head-ache yesterday; complains of dysuria, but there is no tumour above the pubes; intellect clear; no delirium; no petechiæ or cutaneous eruption of any kind.

Slept none last night, but no delirium; took purgative medicine yesterday, which operated well. *Decoct. hord. acid.*

5. Tenth of fever. Pulse 120; tongue dry and yellowish brown; on being questioned, declares she feels no particular pain; no pain of abdomen on pressure; respiration sonorous and rather laborious; the stethoscope discovers the dry "rôle sonore;" aspect of great debility; complains chiefly of want of sleep, but no delirium; moans continually; got some bread and milk this morning for breakfast by mistake, which she ate with avidity and retained on her stomach; two stools dark coloured. *Ol. ricin. cum tinc. rhei. Lot. tepid. capitis abrasis prius capillis. Decoct. hord. acid. Empl. lyttæ inter scapul.*

6. Eleventh of fever; pulse 125, small and weak; tongue dry, yellowish brown; says she is better; intellect clear; declares she feels no pain; four stools, dark; blisters rose well. *Mist. camphor. cum sp. ammon. arom. Decoct. hord. cum acid sulphur.*

7. Twelfth of fever. No improvement; tongue rather more white at edges; intellect clear, and asks for food; incessant moaning; respiration not laborious, but the "rôle sonore" continues; two scanty dark stools; skin of a dusky yellow hue. *Ol. ricin. cum tinct rhei. Decoct. hord. acid.*

8. Thirteenth of fever. Pulse and tongue as yesterday; refuses to speak or to drink, though capable; about two hours ago a sudden faintness came on, during which her pulse failed, and her extremities became cold; a fit of crying then succeeded, and she revived; she weeps now; several stools. *Mist. camphor cum liquor. æther. oleos. Empl. vesic. occipiti. Enema amyli opiatum si necesse fuerit.*

9. Fourteenth of fever. Pulse less frequent (about 100,) but small and weak; the hysterical symptoms have disappeared; she says she is better; on the whole she is weaker; bowels not too relaxed, and had no occasion for the opiate enema; hands rather cold, but feet of a moderate heat; power of deglutition not impaired; intellect clear; three stools, dark green. *Mist. camphor cum liq. æther. ol. Sacrum and trochanters, to be covered with sticking plaster. Wine viii. oz.*

10. Fifteenth of fever. Appearances more favourable to-day; pulse more firm; countenance improved; says she is better; tongue still dry and brown; two stools, dark.

Mist. camphor. cum liq. æther ol. Enema purg. vesp. si opus sit. Wine viii. oz.

11. Sixteenth of fever. Not so well as yesterday; pulse more frequent; more heat and excitement; moans much, but on being questioned says she is better, and slept a little without delirium; one scanty stool. *Pulv. rhei. g. x. iu aq. Menth. Infus. cinchon. Wine viii. oz.*

12. Seventeenth of fever. Nurse reports that she got a change for the worse last night, about twelve o'clock; she has now the mucous rattle of death; extremities warm, and pulse 130; possesses the power of deglutition imperfectly. *Wine xii. oz. Empt. vesic. inter Scapul. Mist. camphor.*

13. Eighteenth of fever. Died this morning at six o'clock.

CASE VIII.

Bartholomew Martin, aged 28; admitted August 16, 1829. Fifth day of fever. Pulse is quick, and skin hot; went to bathe a few days before illness; and subsequently got intoxicated; immediately after which he became very ill; but he states that an individual had died of bad fever in the house in which he lives; he keeps a small huxter's shop; he complains of weight and pain in chest, which is the only pain he feels; no delirium, head-ache, or tenderness of abdomen on pressure. *V. S. ad unc. x. Ol. ricin. Haust. efferv.*

18. Chest and head much relieved; six stools. *Decoct. hord. acid. Haust. efferv.*

19. Nearly as yesterday. *Ol. ricin.* *Decoct. hord. acid.*
20. A good deal of delirium during the night; countenance has the typhoid aspect in a striking manner; no pain of head, or epigastrium on pressure; bowels sufficiently free. *Aq. frigid. capit.* *Decoct. hord.*
21. Low delirium incessant during the night; a marbled appearance of the skin; but no visible petechiæ; tongue dark white and loaded; brown in centre; discharged fæces twice unconsciously in bed; would not allow his head to be shaved. *Pulv. rhei. in aq. Menth.* *Decoct. hord. acid.*
22. Petechiæ are visible to-day; of a light yellow colour; on the whole he is rather improved; two stools, not passed unconsciously; countenance stupid and heavy; but on being roused, he answers that he is better. *Repet. haust. rhei. et haust. efferv.* *Decoct. hord. acid.*
23. Muttering delirium continues; uneasy slumbers, particularly at night; tongue covered with a deep brown crust; pulse is unusually slow, (about 80;) answers rationally, but with hesitation and stammering; countenance pretty good; intellect tolerably clear; skin covered with petechiæ; little or no suffusion of eyes; they are of a yellow tint; four stools of a dark yellow colour. *Pulv. rhei. gr. x. cum Supertart. potass. g. x. in aq. font.* *Decoct. hord.*

A marked improvement to-day; voice free, and nearly natural; slept well, without delirium; pulse 90; weak and yielding; no pain of epigastrium or abdomen; two stools. *Pulv. rhei ut heri, &c.*

- 25, 26. Slight nausea, and vomited last night, which

he attributes to some flummery he took in the evening; he is better this morning. *Haust. efferv. s&ap. Enem. purg.*

28. Convalescent.

CASE IX.

William Bradshaw, aged 25. Admitted August 16, 1829; seventh day of fever. Pulse quick and rather hard; tongue loaded, and white; head-ache; no delirium; lives in the same house with the last patient, Martin; he seems to be convinced he got his fever by contagion, from the person who lately died of fever in the house; he is a shoe-maker and lodged next room to the person just mentioned; knows no other cause for his illness. *Inf. sen-næ cum Sulyh. Magnes. Haust. efferv.*

18. Not better; head-ache very violent. *Rad. capill. et appl. hirudin. xii. tempor et fronti. Pulv. Antim. g. ii. cum Calom. g. i. pulv. ter. in die. Lotio frigidi capit. 1*

19. Rather better; pulse less frequent; no urgent pain; no delirium. *Decoct. hord. acid. Haust. efferv.*

20. Countenance has the typhoid aspect; he is stupid, with eyes half closed; and conjunctiva injected; intellect disturbed; answers stupidly, and rather incoherently; pulse quick and small; tongue loaded grey, but moist; has a slight husky cough; no pain either of head or epigastrium on pressure; two stools. *Ol. ricin. cum tinct. rhei. Haust. efferv. Lotio. frigid. capit. 1 Decoct. hord.*

21. Uneasy night; much delirium of the low muttering kind; petechiae of a light yellow colour appear on breast and back to-day; tongue is rather pale and yellowish;

pulse is weak and irregular ; but a little less frequent than yesterday ; conjunctiva slightly injected ; no pain of epigastrium or head ; but he feels an uneasy sensation in his head, which, he says, he cannot describe ; his countenance is rather improved, and his utterance distinct ; moans occasionally. *Pulv. rhei. g. x. in aq. menth. unc. i. Decoct. hord. acid.*

22. Petechiæ more numerous ; countenance stupid and languid, but intellect tolerably clear ; on pressing epigastrium to-day, he says, for the first time, he feels some soreness ; two stools. *Repet. haust. ex pulv. rhei, &c.*

23. Low muttering delirium continues ; petechiæ thickly scattered over breast and back ; tongue brown and dry ; coughs a little to-day, and respiration rather laborious ; no pain or tenderness of epigastrium or abdomen ; countenance not improved ; no head-ache, but says his head is heavy and *stuffed* ; eyes still suffused ; when roused, he answers rationally, but with hesitation and stammering ; abdomen soft and not tumid ; four stools, which he did not pass unconsciously. *Decoct. hord. Haust. efferv. Repet. haust. rhei. cum supertart. potass.*

24. He is better to-day ; respiration easy ; slept well and without delirium ; countenance and intellect good ; a marked amendment ; pulse more regular and steady ; petechiæ remain as yesterday ; tongue less brown and dry ; three stools. *Repet. haust. ex pulv. rhei cum. super. potass.*

25. Slumbers incessantly, without delirium ; no material change since yesterday ; petechiæ appear of a deeper colour ; mouth very dry ; two stools. *Ol. ricin. cum tinc. rhei.*

26. Continues to improve; petechiæ have begun to fade and disappear. *Haust. efferv.* *Decoct. hord. acid.*

29. Convalescent.

CASE X.

Pat. M'Donell, admitted August 11, 1829; a robust young man, about twenty-eight years of age, a blacksmith by trade; states that he had both a fever and ague before, within the short period of six months; he complains now (May 12), of head-ache and pains in his loins; four or five days ill. *Inf. sennæ cum sulph. magnes.* *Haust. efferv.*

13. Not better; head-ache severe, and on pressing epigastrium, some degree of soreness felt there. *Hirud. x.* *tempor. et x. aliæ scrobiculo cordis.* *Rad. capill.* *Decoct. hord. acid.*

14. Head but little relieved; epigastric tenderness on pressure unabated; tongue deep red at edges and tip, white in centre; no sleep; no delirium. *Repet. applicatio hirudin. ad tempor. et scrobic. cordic.* *Ol. ricini.*

15. Passed another sleepless night, with great anxiety and restlessness; pain of head, however, and soreness of epigastrium have been removed by the leeches; tongue still dark red at edges, white in centre; pulse quick; no delirium; moans much, but says he feels no particular pain; he requests a small quantity of wine, which I do not think it right to allow; three stools; abdomen soft and free from pain or tumour. *Lot. frigid. capitis.* *Mist. camphor.* *Decoct. hord. acid.* *Haust. efferv. sæp.*

16. Violent delirium last night; was obliged to be restrained by the strait jacket; more tranquil this morning; answers distinctly and rationally; pulse and tongue as before; no stool; no particular pain; slight nausea and retching this morning. *Ol. ricin. cum tinct. rhei. Decoct. hord. Haust. eff.*

17. Incoherent and nearly insensible; with difficulty prevailed on to put out his tongue, which is pale white and polished, but not loaded; on pressing epigastrium, he gives some indication of pain; pulse quick and small. *Hirudin. x. tempor. et x. epigastrio. Mist. camphor. Decoct. hord. acid. Empl. vesic. nuch.*

18. Lies on his back in a state of insensibility; pulse is quick, but of good strength; is at present in a warm perspiration; bowels not free; respiration hurried and laborious. *Ol. ricin. cum tinct. rhei. Haust. efferv. Decoct. hord. acid. Empl. vesicans inter Scapul. Wine vi. oz.*

19. A slight improvement to-day; countenance and intellect better; he had, however, a violent paroxysm of delirium last night, which lasted about two or three hours; he is composed this morning; three stools. *M. camphor. Ensma purg. vesp. Wine viii. oz.*

20, 21, 22. Died on the night of the 22d; remained for that and the two previous days in a state of coma and insensibility, power of deglutition being wholly lost.

CASE XI.

John Wiley, aged 42. Admitted August 6, 1829. He is nearly in a state of insensibility; answers incoherently;

pulse weak, fluttering, and nearly indistinct ; tongue covered with a greyish brown crust ; points to his head as the seat of pain ; on pressing epigastrium, he shrinks, and gives some indication of pain. *Mist. camphor. Empl. vesic. inter scapulas. Enema purg. Rad. capillitium. Wine iv. oz.*

August 7. Pulse and voice a little improved ; he says he is better ; but he is still incoherent, irrational, and delirious, muttering incessantly to himself. *Hirudin. viii. tempor. et aliae octo epigastrio. Ol. ricin. Decoct. hord. Wine iv. oz.*

8. A little improved ; slept a little ; stools passed involuntarily. *Dec. hord. Wine iv. oz.*

9. Intellect clearer, and his answers are distinct ; says he feels no pain ; pulse weak ; countenance sunk, and stools and urine passed involuntarily. *Mist. camphor. Wine viii. oz.*

10. No improvement. *Wine x. oz.*

Died on the morning of 11th.

CASE XII.

John Valentini, aged 18. Admitted 25th April, 1829 ; an Italian ; has been three years in this country ; complains of head-ache, but it is not severe ; chest and abdomen are not affected, on strict examination ; took salts yesterday, which operated four or five times ; tongue loaded with dark white mucus ; pulse frequent. *Radatur capillitium et appl. hirudin. x. temporib. Decoct. hord. acid.*

27. Head greatly relieved by the leeches ; slept pretty

well ; no pain of epigastrium or abdomen on strong pressure ; bowels continue relaxed, but without pain ; tongue still loaded, and pulse quick. *Decoct. hord.*

28. Says he feels no particular local pain, either of head or abdomen ; the latter not at all sensible to pressure, even when pretty strong ; bowels continue free ; three or four stools, without purgative medicines. *Hirudin. x. abdomini. Decoct. hord.*

29. No change ; pulse still quick ; tongue white ; three or four stools. *Decoct. hord.*

30. Continues without any apparent local symptoms ; intellect perfect ; no delirium ; no petechiae ; pulse quick ; tongue milky white ; three or four stools, without pain ; aspect typhoid ; countenance stupid and languid. *Decoct. hord. Pulv. rhei. gr. x. cum tinct. rhei in aq. menth.*

1st and 2d May. Nearly as before ; no local pain ; diarrhea, which was very slight, has subsided ; skin of a slightly yellow tinge ; pulse quick (120) ; aspect typhoid. *Ol. ricin. cum tinct. rhei. Haust. efferv. Decoct. hord.*

3. and 4. A slight improvement in the expression of his countenance ; in other respects no change ; quite free from any discoverable local affection ; no diarrhea. *Ol. ricin. cum tinct. rhei. Haust. efferv.*

5. He is better to-day ; five stools after castor oil. *Decoct. hord.*

6. Continues to improve almost imperceptibly.

7. and 8. Convalescent.

CASE XIII.

William Conolly, aged 37. Admitted August 8, 1829; is a writing clerk; unable to tell how long he has been ill; pulse weak, and frequent; tongue loaded with a dark grey crust; he is much emaciated, and his feet are œdematous; and he appears to have lain a considerable time in fever; he is delirious and incoherent; giving some indications of pain on pressing epigastrium. *Hirud. x. tempor. et x. aliæ epigastrio. Ol. ricin. Decoct. hord.*

9. Epigastrium somewhat less tender, and intellect rather clearer; in other respects as yesterday; a red spot on sacrum. *Repet. hirudin. tempor. et epigastrio. Decoct. hord. Haust. efferv. sæpe. Sacrum and Nates to be covered with sticking-plaster; (obducantur Sacrum et Nates. empl. adhes.)*

10. Appears more sunk and exhausted; tongue dark grey; pulse small, weak and frequent, stools passed unconsciously; slumbers, with muttering delirium; he is roused with difficulty, and then says, he is better; bowels not free. *Enema purg. Empl. vesic. inter scapul. Mist. camphor. cum Sp. ammon. arom. Wine viii. oz.*

11. In a state of coma and insensibility as to the objects of sight and hearing; moans, and cries out, however, on being moved or stirred in any manner; some difficulty of deglutition. *Empl. vesic. suris internis M. camphor. cum Sp. ammon. Wine viii. oz.*

12. Pulse frequent and feeble; but rather more distinct and regular than yesterday; respiration laborious; lies on

his back, motionless and speechless ; cries out, however, on being stirred ; features sunk ; tongue black ; teeth and gums covered with black sodes. *Mist. camphor. cum Sp. amm. arom. et liq. æther. ol. Wine viii. oz.*

13. Died.

CASE XIV.

John Doyle, aged 34. Admitted yesterday, December 11, 1829.

Skin covered with petechiæ, which are most distinct on back and chest ; they appear in the form of irregular spots, not points ; he is incoherent and stammering in his language ; intellect much impaired ; cannot tell accurately how long he is ill ; but, says about a fortnight ; conjunctiva slightly injected ; countenance dull ; and there is a dark hue of the skin ; respiration good ; and abdomen and epigastrium not sensible to pressure. *Raso capillitio, lavetur caput aceto diluto frigidi. Ol. ricin. cum tinct. rhei.*

13. Was very uneasy last night ; passed fæces and urine in bed ; skin covered with petechiæ, (large and circular purple spots;) very incoherent, and intellect nearly abolished ; pulse is about 100, and regular, but very weak ; tongue brown, and dry all over ; abdomen and chest are free from any symptoms of local disease. *Lavetur caput, pectus et humeri aceto dilut. tepido. Colom. g. ii. pulv. antim. g. ii. camphor. g. i. Pilula bis. in die.*

14. Feet cold, and a little blue or purple ; pulse is less frequent, and is dicrotic ; it is not very weak ; tongue is of a light shade of brown, and is moist ; his countenance

is paler, but on the whole more natural; it is not so dark or tumid; petechiæ very thick; passed urine unconsciously, but had no stool; he took pills as prescribed; he protrudes the tongue well; and his intellect seems rather improved; he was very loquacious (delirious), during the night, but did not attempt to get out of bed; his symptoms on the whole are favourable, except the coldness and blueness of his feet; he seems to have less of the tremor and subsultus than yesterday; the dicrotic pulse seems to portend approaching crisis. *Ol. ricin. cum tinct. rhei. Mist. camphor. cum liq. æther ol. om. hor. iii. Laventur pedes. Spir. Terebinth. et applicet calor. sedulo.*

15. Appearances this day more favourable; the functions of the sensorium are re-establishing themselves; intellect greatly improved; feet have a natural temperature, and have lost their blue tinge; pulse is not dicrotic, but equable and firm, rather frequent; tongue is moist; on the whole his condition is so much improved, that the inference drawn yesterday of an approaching crisis from the dicrotic pulse seems verified; he answers distinctly, and seems anxious to express his gratitude for the attention paid him; petechiæ are disappearing; bowels are free, and no uneasiness of epigastrium, or abdomen on pressure; a slight muttering delirium still remains. *Mist. camphor. cum liq. æth. ol. Haust. eff. sœpe. Wine ii. oz.*

16. The crisis has not taken place in so decided a manner as yesterday's improvement seemed to portend; his pulse is more full, and would lead to the suspicion that he got some food, or more wine than two ounces, which was the quantity ordered; his feet are rather cold, and a little

bluish to-day ; his intellect, however, is rather improving ; he knows me to be a physician who wishes to cure him ; he knows he is in an hospital, but cannot tell the name ; he forgets where he resided ; but remembered his occupation, which is that of a writing-clerk ; petechiæ are fading ; he had one or two scanty motions ; lies on right side ; tongue moist. *Ol. ricin. cum tinct. rhei. Haust. eff. sæpe. Laretur. caput sedulo aceto diluto tepido. Applicetur calor pedibus si opus. Decoct. hord. acid.*

17. Pulse has lost the fulness of yesterday ; feet have a good heat ; on the whole he is improving ; but still cannot recollect the place of his residence before admission ; bowels opened by castor oil. *Haust. efferv. Decoct. hord. acid.*

18. Going on well ; memory returning ; lying on right side. *Ol. ricin.*

19, 20. Gradually getting better ; expresses a wish for food ; intellectual functions re-established.

21, 22. Has slowly become convalescent.

CASE XV.

Christopher Fasrell, admitted on 6th December, 1829 ; a labourer, aged 26 ; three days ill.

Dec. 7. Head and epigastrium painful ; cough and soreness, but no pain of chest ; general pains severe ; no sleep ; says he was affected with rigors in the beginning ; face flushed ; no petechiæ ; says his brother died of fever lately, but they did not live together ; he attended his funeral ;

pulse full; tongue brown in centre. *V. S. ad unc. x. Solut. tart. Antim*

8. No improvement; no sleep; blood not buffed, but coagulum fills the cup, and has little serum; pulse less full, but frequent, weak and irregular; tongue dry, inclined to brown in the centre; no delirium, but very uneasy; petechiæ appear on chest; epigastrium tender; slight head-ache; five or six stools; sighs much. *Decoct. hord. cum acid. sulph. Haust. salin. eff. sœpe. Radat. capillitium et lavetur caput aq. gelidâ.*

9. No amendment; spots increased in number, red; three stools; soreness of epigastrium not much relieved; head-ache; pulse quick; tongue brown. *Applic. hirudin. x. epigastrio. Decoct. hord. acid. Haust. salin. sœpe. Lotio frigid. capit. sœpe.*

10. Nearly as yesterday; pulse rather fuller; petechiæ thick on back; tongue all over brown; no stool since yesterday; leeches not applied, but on pressing epigastrium it is softer and less painful; but little sleep. *Ol. ricin. haust. eff. Decoct. hord. acid.*

14. Has been sleeping continually, and is now so heavily asleep that it has been difficult to awake him; pulse is very frequent at this moment, but he has been a little agitated by the means used to awake him; on being desired to show his tongue, he only protrudes the tip, which is of a brownish white or grey colour; it is dry and parched; he sits up well to drink; swallows well and drinks deeply; no tremor or subsultus; his countenance is peculiarly heavy and stupid, and his eyes imperfectly open, and they have a dark red suffusion, as if the capil-

lary veins were principally injected; he answers unsteadily and seems to make an effort to study what is passing around him; in his answers to me, however, he uses the word sir, and says he is better; he calls, when he has occasion for the night chair. *Lotio tepida cum aceto diluto. Empl. vesic. muchæ.*

15. He is going on, to use a phrase prevalent among the nurses, "sleeping-a-head;" which they consider a sure presage of recovery.

16. Going on well; sleeping a great deal; tongue is changing from brown to white; says he is better; oil has operated well; no uneasiness of epigastrium or abdomen; his heretofore stupid physiognomy is acquiring a character of animation. *Decoct. hord. Haust. eff.*

17. Sleeping on as before; expression of countenance more natural; pulse and tongue as yesterday; bowels sufficiently free. *Decoct. hord. Haust. eff. sæpe.*

18. Is going on well; tongue moist, and returning to its natural colour.

19, 20. Gradually getting better.

21, 22. Better; tongue clean, yet he seems still drowsy and stupid.

22. On this day, for the first time, he expresses some inclination for food.

23. Convalescent.

This patient was afflicted for several days with severe pains in the soles of his feet, which were always much aggravated by warm or stimulant applications. It occurred to me to try the tincture of colchicum, on the supposition, that these pains were of a rheumatic character.

Whether the conjecture as to their nature was right or wrong, he received considerable relief from the medecine. Cold applications externally, were found more useful than hot.

CASE XVI.

James Lowry, aged 37. Admitted yesterday, December 14, 1829; ninth day of illness.

15. Tenth day of fever; pulse very frequent and irritable, not full; tongue loaded, brown and dry; intellect not materially affected as yet; says he was attacked at first by sickness of stomach and vomiting, and in two days after by head-ache; no rigors; on pressing epigastrium and abdomen, he says, he feels no pain, but shrinks a little from pressure of epigastrium; respiration good; chest unaffected; he is a disbanded soldier; thinks he got his sickness from cold. *Rad. capillit. et lav. caput aceto dilut. Colom. g. iii. in pulv. et post. iv. hor. ol. ricin. drach. vi. Appl. hirudin. x. tempor. Haust. salin. eff.*

16. No material change in his condition; tongue quite dry, and covered with a brown crust; he moans a good deal; his intellect is quite clear; he says he is chiefly distressed by deep seated pains in his bones; his head does not ache much this day; his bowels have been well opened; pulse quick; skin hot, little or no sleep; countenance not stupid, but rather pale; lips dark red; epigastrium and abdomen not at all painful. *Decoct. hord. acid. Haust. eff. sœpe.*

17. No change since yesterday; says he had not much

head-ache ; complains of a beating in his temples, which is distressing to him ; got little or no sleep, yet his intellect is not affected ; tongue quite dry and brown ; pulse quick. *Hirudin. x. tempor. Lotio tepida capitis cum aceto diluto. Decoc. hord.*

18. Head free from pain ; intellect still unaffected ; pulse quick ; tongue dry and brown, but a white border appears round edges ; no petechiæ ; bowels rather confined ; little or no sleep. *Ol. ricin. cum tinct. rhei. Haust. eff. sæpe. Decoc. hord. acid.*

20. Much better ; tongue has lost its brown, and is white and moist ; says he is much better, and requests to get food. *Decoc. hord.*

21. Convalescent.

Sketch of the Pathology of Fever, deduced from the Symptoms.

The cases above detailed are sufficient, I trust, to exhibit a lively portrait of the different types of fever, which prevail in Dublin ; whatever other defects they may possess, the author can, at least, pledge himself to the truth and fidelity of the picture. The first four cases present examples of primary gastro-enterite, or that disease which has proved a false light to M. Broussais ;—two of these are complications of gastro-enterite, with severe pulmonary disease. The fifth case exhibits an example of secondary gastro-enterite, or its complication with typhoid fever

—other examples also occur of this complication in a less distinct form.

The remaining cases afford examples of various types of typhoid fever, from the mildest to the most intense and malignant form of the disease. The case of Edwards, No. 7, is a marked example of the “fievre ataxique” of the French writers. In the case of Fasrel, (case 15,) a short synochoid period was followed by a protracted and strongly marked typhus, accompanied by petechiae, stupor, abolition of the intellectual faculties, and extreme debility. The case of M'Donnell, (10,) was similar in type, but with a longer synochoid period. The cases of Boylan, No. 6, and Valentini, 12, and Lowry, No. 16, would, probably, be called typhus mitior by the disciples of Cullen; but they possessed also so many traits of the synochoid character, that their allocation must be a subject of perplexity to those who adhere strictly to artificial arrangements.—The remainder were cases of perfect typhus.

Several other cases were taken down, but our limits will not permit their insertion.

From those cases we deduce the following general conclusions.

First.—That there exists a primary gastro-enterite, attended by a fever of a peculiar kind, approximating in some respects to the typhoid character, like all intense phlegmasiae of the gastro-intestinal canal, yet differing from typhus by some obvious and striking properties.—The following is the train of symptoms peculiar to this disease, viz.:—Pain, uneasiness, and generally fulness of the epigastrium, or abdomen, or both aggravated by pres-

sure, and accompanied by head-ache, nausea, or retching, and, in many instances, by frequent vomiting, particularly after the introduction, even of the smallest quantity of fluid or solid aliment, into the stomach. The appearance of the tongue is peculiar and characteristic ; it is either of a vivid or dark red colour, over its entire surface, or it is red at the edges and point, but covered with a dark white fur in the centre, through which specks of red are occasionally visible ; the centre, however, is also frequently brown, or even of a yellowish hue, whilst the edges are dark red, as above described, and the papillæ all over the surface unusually prominent ; and this organ, on the whole, presents a more striking appearance of irritation and sub-inflammation in this disease than in any other type of fever. The pulse is usually deficient in fulness ; it is small, frequent, and compressible, and approximates more to the typhoid than the synochoid character. It is also accompanied by a lower temperature of the skin ; and, in a word, displays none of the signs of that strong re-action, which marks the early stage of synochus. It is distinguished, however, from typhus, by the comparative mildness of the cerebral affection ; the author has, indeed, been frequently surprised at the clearness and integrity of the intellectual faculties, in the midst of that extreme depression of the muscular powers which characterises this type of fever. This disease is slow and gradual in its access as well as its progress ; the patient feels himself ill for some time, affected with loss of appetite, costive bowels, uneasiness, and occasional twitches of pain at the epigastrium and in the abdomen, which continue until the

febrile movement is developed, when the train of symptoms before described, sets in with all its violence. The progress is also remarkably slow, the disease being frequently protracted to the sixth or seventh week before convalescence takes place. It is further distinguished from typhus by the absence of petechiæ, a black crust on the tongue, or black sordes of the teeth and gums, which the author has never observed in any of the clearly marked cases of this disease he has witnessed. The bowels are either constipated, or too relaxed, and occasionally these two states alternately succeed each other. The abdomen is tumid, resisting and tender to the touch, when pressure is employed externally;—the sleep is uneasy, interrupted, and delirious; but when awake, the patient seems to suffer little diminution of his intellectual powers.

As a further proof of the real nature of this affection, it may be stated that the author has invariably observed, that in proportion as the abdominal symptoms were mitigated or subdued, the affection of the head and the febrile symptoms suffered a simultaneous mitigation or removal. The colour of the skin in this disease is commonly one of the shades of yellow;—occasionally the tint is deep and dark, as in the case of Kitts (No. 1,) where it approached to one of the lighter shades of mahogany. The intense bright yellow colour of the skin, peculiar to jaundice, and, we presume, to yellow fever, has not occurred in this hospital since the epidemic fever of 1826; but, from the author's recollection of the cases which then occurred, he is inclined to consider them as modifications of the disease we have been considering.

Secondly. The disease now described may be secondary, that is, may supervene on typhoid fever, a predisposition being probably formed by previous disorder of the stomach and alimentary canal, functional or organic, or by the prevalence of that epidemic constitution or malaria which disposes to diseases of the stomach and bowels, as cholera, dysentery, &c. This adjunct to typhoid fever may occur at an early period of the disease, but it is more frequently observed to accompany the advanced stages.

In those cases, we are taught by numerous dissections made by modern pathologists, that the principal, in many instances, the sole seat of disease, is the lower part of the *ileum*, near its junction with the *cæcum*; which lesion is probably to be attributed to the densely glandular structure of this part of the intestine, and partly, as we believe, also to its inferior situation, which favours the accumulation of acrid secretions in this part. In a disease like typhus, where the sensibility is greatly impaired, or even destroyed altogether, this affection may exist, without being felt or complained of by the patient; but it will very seldom, indeed, fail to be detected by careful examination externally, or by diarrhea, or a tympanitic state of the abdomen,—which latter are its appropriate signs, when the patient is in a state of *coma* or insensibility. Another of its symptoms, more rare than those above-mentioned, is hæmorrhage from the bowels, which, if superadded to a tympanitic state, presents the most intense and hopeless form of this affection. With respect to the colour of the alvine discharges in this affection, it is stated by Dr. Bright that they are generally ochre coloured; but the author has

more frequently seen them of a dark or mud colour—yet he has also frequently observed them as described by Dr. Bright.

Thirdly.—The author is of opinion that there are good grounds in nature for dividing idiopathic continued fever into two great classes, which become the foundation of important practical indications, viz. :—Inflammatory fevers (*synochæ*), and typhoid fevers (*synochus* and *typhus*) ; between the first and second of which, as formerly observed of the second and third, various intermediate shades of type occur, the allocation of which to this or that genus or class, it will be difficult to determine. Again, he infers that in the first class (*synocha,*) the morbific cause of fever exercises its agency principally over the heart and arterial system, whilst the sensorium and nervous system enjoy a comparative exemption from its influence. Further, that the operation of the morbific cause in typhoid fever is directed primarily and essentially against the brain and nervous system (including the spinal chord,) and through that system against the heart and arteries, and their capillary extremities ; that the various modifications of class and species, arising out of the two great divisions above-mentioned, may depend on specific modifications in the morbific cause itself, or in the original conformation or constitution of the individual who is the recipient of the morbific impression ; but that the relation between cause and effect here is as yet far removed from our comprehension. We know, however, that in every case of typhoid fever the prominent features of the disease, from first to last, and the character of its symptoms, are nervous,

modified by the various degrees of arterial and vascular action by which they are accompanied.

If we examine the first of the two species of typhoid fever (*synochus*), we shall observe the phenomena to succeed each other in the following order:—first, a stage of nervous and vascular depression; secondly, a stage of vascular excitement or reaction; and thirdly, a stage of universal exhaustion and debility, announcing a more complete depression of the nervous, vascular and muscular powers than in the first stage. In the perfect typhus again, the whole series of phenomena exhibit only increasing degrees of nervous, vascular and muscular depression; the power of arterial reaction is annihilated, and the state of the system approaches to that of general paralysis.* The outline of this description has been already published by the author in the annual report of this hospital, for the year 1819,† and the principles of practice which flow from it inculcated in his subsequent ones.—Whether the power applied to the sensorium, in this case, be sedative, as Dr. Cullen thought, or excitant, is a question evidently beyond our power to determine; we merely

* To this state the term *adynamia* has been applied; but the author is unwilling to render a subject, sufficiently obscure in itself, still more so, by involving it in scholastic and ill defined terms.

Every physician, we believe, who has treated this disease, will at once admit, that exhaustion and debility form one of the most striking and characteristic symptoms of perfect typhus. We are far, however, from supposing that this debility is the cause or essence of the disease, and we doubt if any modern physician thinks so;—we believe it to be a consequence—a symptom only, but one of the utmost importance and of which the practitioner should never lose sight.

† “The first train of symptoms are nervous and sensorial; the second, nervous and vascular.”—*Annual Report for 1819. Trans. of Assoc. of Coll. Phys. in Ireland*, vol. iii. p. 476.

know its visible and palpable effects. This leads us to the consideration of the physiological condition of the brain itself in this disease. It appears that in every case of typhoid fever, at least the exceptions are so rare that they only serve to establish the rule, there is a determination of blood to the head, sufficiently manifested by the red and injected eye, the burning forehead, the throbbing temples, and the acute head-ache, which accompany this disease at variable intervals of time after its development. This state of the organ is by some called inflammation, whilst others, although they admit a determination of blood, yet deny that the state induced possesses the characters of inflammation; and the term congestion has been introduced to express the condition of the cerebral vessels under those circumstances. Thus it appears, that the dispute on this subject is primarily one about words; but it is also a dispute about the precise nature of inflammation itself, with which, in truth, we are but imperfectly acquainted. We know, however, with certainty, and to this fact, perhaps, our knowledge in every case of inflammation is limited, that the ordinary condition of the brain in typhoid fever is that of vascular fulness and distension; but beyond the expression of this simple fact, strict philosophy will not permit us to proceed. Dissection may, indeed, occasionally discover the vestiges of acute inflammation in the brain; but we believe, in the majority of cases, it has failed to detect it. This condition of the brain, the author holds to be consecutive, not primary, in the morbid series, which constitutes the disease, but when once fully established, it becomes itself a new source of

morbid actions, re-acting on the sensorial disorder which produced it; and thus, by its direct and reflex influence, producing the characteristic phenomena of the disease. But this condition, which may be called typhoid inflammation, may also be propagated to other organs essential to life, as the lungs, stomach, &c.; and we are instructed by dissection, that nearly the whole of the mucous surface, or internal lining of the body, is in a state of vascular distension in typhoid fever.

Fourthly.—We are not as yet sufficiently advanced in the science of the animal fluids to determine what part the blood plays in the generation of fever, but so far as experiments have been made, it has been found, when drawn in the first or second day of perfect typhus, but little altered from its natural state; we know, however, with certainty, that in a short, but indefinite period after the formation of the disease, the blood and other animal fluids suffer a manifest alteration in their physical properties; and thus, in their turn, become a part of the morbid circle, which constitutes the disease.

From all that has been above stated, it follows, as a necessary inference, that M. Broussais's doctrine is chiefly erroneous in its indefinite application and its universality, in extending the signification of terms, proper only to the species, to a whole class, and in laying down as the etiology of the class what is only true of the species.

The author is far, however, from wishing to deprive M. Broussais of his just meed of praise.—Although the gastro-enterite had been previously accurately described by other writers, yet to him belongs the merit of directing

the attention of physicians in a more particular manner to this disease, and more clearly and completely developing its pathology; and hence, we do not hesitate to say, that we number him among the improvers of practical medicine, and the benefactors of mankind.

The original describers of this species of fever, and not inferior, perhaps, to any of their successors, were the German physicians Röderer and Wagler, who describe this disease as having prevailed at Gottingen, in an epidemic form, in the year 1760, ("de morbo musoco") and whose work exhibits an admirable history of its symptoms, and morbid anatomy.

This disease was subsequently described by M. Pinel, partly under the titles of "fievre gastrique," and "embarras gastrique," and partly under that of "fievre muquex;" and in England, it has usually been known under the general appellations of biliary disorder, and biliary fever, titles inappropriate, and which by no means express its real character. In France, it again became the object of investigation by M. M. Petit and Serres, and by M. Bretonneau, and more recently, in an elaborate work by M. Louis; but all these authors appear to me to have confounded the primary with the secondary form of the disease; and M. Louis, in particular, has adopted the theory of Broussais in its fullest extent. In England the subject has received further illustration, from the cases published by Dr. Bright of London, and the treatise of Dr. Burne.

Summary of the Treatment of Fever.

The great object of establishing correct principles is to guide us to a safe and successful practice, to rescue the victim from the grasp of death, and restore him to life and health ; this is the end of all our reasonings, our labours, our anxious solicitude. But, alas ! have we arrived at that point of certainty in our principles, that would enable us to rely on them with confidence as fixed rules of practice ? Can he who contemplates the divisions which embarrass the science of pyretology, the numerous theories, and conflicting opinions, which distract its cultivators, lay his hand to his breast and say, that any theory of fever, which has hitherto been proposed, furnishes a principle, which he would at once apply without fear and hesitation to its treatment ? However partial he may feel to the views, a miniature of which, he has endeavoured to lay before the reader, the author is compelled by truth and candour to declare, that he would answer in the negative.

There is no part of the philosophy of fever, if I may use the phrase, which has been treated with more levity, and disregard of the strict rules of induction than its treatment ; and yet this is the most important of all, the great problem to whose solution all our researches are directed. This is the grand error of speculative and theoretic reasoners ; they first form their principles, and then deduce the practice, and too often apply it without hesi-

tation or remorse; whereas, strict philosophy requires that they should first establish the practice, and afterwards deduce the principles. In fine, our proposition is, that every man should form his practice, not from preconceived opinions,—not from delusive theories, but from a multitude of facts and experience.

Let the advocate of primary inflammation, who commands us to abstract sixty oz. of blood in the first stage of typhoid fever, first bring forward his individual cases, numerous and authentic, in confirmation of the success of this practice, and then if we are satisfied with their number and authenticity; if, in fine, they stand the test of rigorous examination, we shall admit that he is warranted in his conclusions to the extent of his experience. But we should afterwards take care to make a minute comparison of that experience with the experience of others, and with our own. The patrons of humoralism on the other hand, we would address in a similar strain, and entreat them to bear in mind, the uncertainty, to say the least of it, of this doctrine, and to recollect, that where human life is the subject of experiment, and must be the sacrifice of error, ambiguous principles should never become the basis of practice.

The author shall now proceed to state the result of seventeen years' experience in the treatment of fever in that hospital, whose report he now writes.

The primary gastro-enterite is rarely a fatal disease, I mean in its ordinary form of prevalence in Dublin. In its mildest varieties are included all those cases of mild fever which are commonly attributed to indigestion and disor-

dered bowels, and which are the peculiar plague of infancy and childhood.

These complaints are, for the most part, easily removed by removing the irritation which produces them, that is, by unloading the alimentary canal of its acrid contents, which is best effected by a few gentle purgatives, among which a small dose of calomel, or some other mercurial, will generally be necessary. In the severer forms of the disease in which M. Broussais, we think, with justice includes "delirium tremens," the most efficacious of all remedies, according to the author's experience, is local or capillary blood-letting. Occasionally, when the accompanying fever assumes the synochoid character, the author commences his treatment by taking twelve or fourteen ounces of blood from the arm; a measure which will also be generally advisable, when the pain of the epigastrium and abdomen are very acute, and increased by slight external pressure. The remainder of the treatment may be conducted by the repeated application of leeches to the epigastrium or abdomen, according to the nature of the case, until all pain and tension be removed. As the number of leeches at each application may be considered a point of importance, it may be stated that the maximum number in the four first cases recorded above, and which were cases of great severity, was twelve at each application; and even from this number (which some will probably consider too small,) the author has invariably found a decided benefit. After the leeches, it is usual to apply warm stupes or an emollient poultice over the part most affected. Next in efficacy to local blood-letting, we would

place laxatives;—irritating purgatives are not applicable here, though we by no means sympathise in the horror which the disciples of M. Broussais entertain against this class of medicines,—reasoning, not from experience, but from the prejudices of theory;—indeed we entertain little doubt, that as the disease is frequently produced by the omission, so it is protracted by the neglect, or fear of purgatives.

Rhubarb and manna were the favourite purgatives of Rœderer and Wagler, and accordingly, we believe the infusion of rhubarb and manna to be, by its mildness and efficacy, well suited to this disease. In hospital practice we use small doses of castor oil and tincture of rhubarb, or more frequently rhubarb alone, suspended in some aromatic vehicle. A pill, composed of rhubarb, Dover's powders, and a moderate quantity of the *hydrargyrus cum creta*, or of blue pill, is a combination which the author frequently employs in this disease, and which he has found to fulfil the indications required in this complaint of a soothing and mild laxative.

The next class of medicines applicable to this disease is mercurials, and of these the particular form which we prefer is calomel and opium. This medicine has been found often successful in allying irritation of the stomach and vomiting, when the means above recommended had failed in producing this effect. The author has not tried mercurial friction, but he has no doubt that particular cases may occur in which this may be the most advisable mode of administering the remedy. Whatever form of mercury is used, it will be necessary to carry it to the extent of a

slight salivation, before the full effect is produced. One of the most distressing symptoms in this complaint is nausea and vomiting, which incessantly harass the patient. When the measures above pointed out have failed to remove this symptom, we have applied a mustard poultice or a blister to the epigastrium, which have seldom failed to remove it.—In those cases Dr. Bright recommends the *carb. magnes.* internally, and small draughts of soda water, with a tea-spoon full of brandy. When the inflammatory, symptoms have been removed or mitigated, we consider opium as a medicine of considerable value in this complaint. In the case of an esteemed medical friend, (himself an experienced physician,) whom the author attended, while labouring under a very protracted form of this disease, it was thought advisable to administer opium to allay abdominal pain and irritation, and the acetate of morphia was selected as least likely to disagree with the stomach;—so decided was its effect, and so prompt and permanent the relief, that the gentleman assured my colleagues in attendance and myself, “that we had hit upon the true remedy at last.” When, however, diarrhea becomes a prominent symptom of the disease, opium, or any other medicine calculated to constipate, should be administered with caution, as we consider moderate diarrhea a sanative process in the inflammations of the gastro-intestinal mucous membrane. In such cases our object is to moderate, not suppress this discharge; and for this purpose we have found Dover’s powders and rhubarb one of the best remedies, in conjunction with gummy and mucilaginous diluents. Secondary inflammation of the mucous or serous

structures of the lungs are by no means an unfrequent complication in this disease ; of which examples occur in the cases of Somers and Duffy, above described. Such cases are to be treated according to the ordinary method by general blood-letting, if the strength of the patient permit ; but if not, by the local abstraction of blood, blisters and expectorants, as ipecacuanha, squill, &c. Such is the mode of treatment which had been adopted in the cases above described, and they recovered under very unpromising circumstances.

The secondary gastro-enterite which supervenes on typhoid fever, is to be treated in the manner now described with respect to the primary disease, with the exception of general blood-letting, which is never admissible ; the disease must be encountered, in this case, by the repeated application of leeches, laxatives, and mucilaginous diluents, and the other remedies above described. Of haemorrhage from the bowels, we have one example in the cases above detailed, and it is by no means an infrequent occurrence in this form of the disease ; it is even common for slight haemorrhage to continue after the fever has disappeared, and to protract the convalescence beyond its natural period. In all the cases of this description which occurred in the author's ward, the means above described were attended with complete success.

We come now to the last and most difficult object of investigation—namely, the general treatment of typhoid fever, which we shall first consider abstractedly from the various inflammatory affections with which it may become

complicated in its progress; and secondly, in relation to those complicated themselves.

For this purpose, it will be advisable to consider the disease under the three stages formerly mentioned, viz.: 1st, that of nervous depression; 2d, that of the synochoid stage, or arterial reaction; and 3d, the stage of exhaustion or universal debility.

We are now speaking of the synochus;—suppose a patient presented to us in the first stage, that is, in the first two or three days of fever, with a pale shrunk countenance, a shrivelled skin, a general feeling of coldness, a heavy and dejected air, a faltering voice, head-ache, anorexia or nausea, or vomiting—what is to be done? Bleed, says Dr Smith, bleed to sixteen ounces, and bleed again and again “to the subdual of inflammation.” The marks of inflammation are as yet, however, indistinct, and inflammation itself not yet developed, according to Dr. Smith’s own ideas on the theory of fever, which perfectly accord with ours.—Besides, the only external signs we can ever have of an *internal* inflammation are pyrexia and pain, and the latter of these is frequently absent in fever; and the former, Dr. Smith informs us, and we cordially agree with him, can never be cut short by a stroke of art. We fear, therefore, that as a practical canon, the subdual of inflammation is one of vague and uncertain application. It is true, indeed, that pain of the head is most generally present, but we apprehend that no means which fail in removing pyrexia will succeed in banishing, that is completely, head-ache. Again, in this stage of fever we really possess no positive means of distinguishing, *a priori*,

the mildest from the most intense and dangerous types of fever; but here we are obliged to apply the same canon to all.

In fine, large detractions of blood in the incipient stage of fever, accord only with that doctrine of fever which supposes inflammation to be its primary and essential cause. But this is no objection to the practice, in our eyes; for in regulating our practice we pay but little attention to theory; we only seek proofs of its utility.— One or two cases will never suffice in the way of evidence; for those cases may have been originally mild in character, and may have recovered without losing a drop of blood. We believe the experiment of abstracting blood to a very large amount (as forty ounces each bleeding,) was made some years ago in Edinburgh, and the history of the result had been published by Dr. Walshe, in a report of the Queensbury-House fever hospital. To the best of our recollection it was generally considered to have failed, and not to have materially diminished the mortality; and we know that the practice has not been imitated by the best informed physicians of that capital. We shall wait, however, for further proofs from our brethren of the London fever hospital.

With Dr. Smith's principles the author heartily concurs; he believes they are pretty nearly identical with those he has endeavoured to sketch in the foregoing part of this report, and in other previous reports. The only point in which he is inclined to dissent from Dr. Smith is, the extent to which he recommends blood-letting to be carried in the incipient stage of fever, an extent neither

consonant with Dr. Smith's own theory, nor supported by sufficient evidence.—Of Dr. Smith's talents, professional and literary, he begs to say that he entertains the highest opinion. In the first stage of fever, the author's practice is merely palliative; he is satisfied with administering a moderate emetic or purgative, enjoining rigid abstinence and confinement to bed; if possible, a warm bath, and he waits a little, until a further development of the disease shall have given a probable insight into its nature and type. As soon as reaction has commenced, if it be vivid, and accompanied by increased heat, flushed countenance, frequent and full pulse, blood-letting is then resorted to. A single venesection of ten or twelve ounces is at first practised, and if this prove insufficient to reduce the pulse, the heat and flush of the skin, and the general excitement, the process is repeated; but beyond this, unless under very peculiar circumstances, the author seldom thinks it safe to proceed. Occasionally, though certainly rarely, a single bleeding, as above, has brought the synochoid stage of this fever to a conclusion, and rapidly converted it into the typhoid. This transition is well illustrated by the case of Farrell, No. 15, above recorded. When this patient was first presented to the author, his fever was of a strongly marked synochoid character, with strong and full pulse, flushed countenance, burning skin, and headache. He was bled immediately to the amount of ten oz. and a weak solution of tart. emetic was administered. On the following day the author was not a little surprised to find his pulse irregular, small, weak, and frequent; his skin of a dusky hue, and covered with large petechiæ;

his countenance muddy and typhoid; and his intellect, which the day before was perfect, now much impaired. This patient ultimately recovered, after a protracted and doubtful struggle. Another illustration will show the uncertain and versatile character of the disease we are considering;—in the next bed to Farrell, and admitted on the same day, lay a patient named Ryan, nearly also of the same age. The symptoms and general appearance of the two patients were so strikingly similar, that they made a strong impression on my mind; they were treated of course, exactly in the same manner; but what was the event? On the following day Farrell was found in the state above described, and Ryan was convalescent. In the month of December, 1829, a patient named Reilly, a grocer's clerk, young, was admitted into the author's ward; with him a note was sent to the hospital, addressed to the apothecary, from a medical gentleman, who attended him previous to admission, stating, that he had been bled to sixteen ounces, and that the blood was buffed and cupped. His case wore the synochoid character, but his head was not yet materially affected; and he was bled again by my direction to twelve oz.; on the following day I found him in a paroxysm of maniacal delirium, the most violent I ever witnessed; yet, with a pulse so small, weak, and irregular, that general bleeding could not again be hazarded. This patient was treated by the repeated application of leeches to the head and by the cold effusion; and after a phrenzy nearly of three days continuance, perfectly recovered from a fever, which, though marked by symptoms far more violent, was not half the length of

Farrell's fever, before mentioned. I adduce those cases to show the infinite variety of forms this disease assumes, and the fallacy of conclusions drawn from particular cases; they will also serve to illustrate the author's practice in the synochoid stage of synochus. His mode of applying the cold affusion to the head is as follows:—The patient is supported by one or two nurses, while his head projects beyond the bed over a pail or tub placed near its side, another assistant then pours a stream of cold spring water from a considerable height on the crown of the head, previously shaven and denuded from a large ewer or jug. The shock is very powerful, and some caution even will be necessary, to prevent the respiration from being suspended. Dr. Smith recommends another mode of applying the cold affusion, which is still more powerful, but less convenient; namely, the patient being seated in a large tub near the bed-side, a man standing on a table by the side of the tub, pours from an elevation as high as his arm can reach, a full stream of cold water out of the pipe of a watering-pot, deprived of the rose, on his naked head. If this mode of applying the cold affusion be adopted, we should think it would add to its efficacy to immerse the patient's feet in warm water. The next class of medicines available in the synochoid stage of fever are purgatives and diaphoretics; the ordinary purgatives are castor oil, or infusion of senna and sulphat of magnesia. The author seldom uses calomel as a purgative, a little influenced, he owns, by the clamour of the French writers against irritating purgatives;—calomel, however, is very generally employed in minute doses, in combination with

antimonial powder as a diaphoretic ; thus, a grain or half a grain of calomel, with two grains of antimonial powder are given on the days in which purgation is omitted, twice or thrice ; whether this combination produces its salutary effects, by acting on the skin, or by improving the secretions of the alimentary canal, the author cannot determine ; but he has invariably found it a useful medicine. In cases however of abdominal irritation, it seems inapplicable, and ought to be withheld.

We next come to the stage of exhaustion or universal debility, between which, however, and the previous stage, the limits are so ill defined, and the first so gradually and insensibly passes into the other, that the most sagacious observer is unable to determine their precise boundaries. There is here no question about general blood-letting, and even capillary is seldom admissible, unless some urgent local inflammation may arise. In this final stage of fever, the author's practice is one rather of vigilant observation than active treatment, but generally speaking, it is tonic, and moderately stimulant. The bowels are gently acted on by small doses of rhubarb or castor oil, or by mild purgative enemata ; but if diarrhea prevail, it is moderated by the pulv. ipecac. comp. and rhubarb as before stated, or by starch and opiate enemata ; if coma, stupor and insensibility exist, we apply blisters to the nape, forehead, temples, and along the spine in succession. If the pulmonary organs are materially affected, blisters are applied to various parts of the thorax, according to circumstances.

The hurried and laborious respiration, which so fre-

quently accompanies this stage of fever, is not to be attributed to inflammation of the lungs, but rather to the deficiency of nervous energy, arising from oppression of the brain, and also partly to exhaustion. As a proof of this we have frequently seen it suddenly disappear, with the disappearance of the cerebral affection, and come and go several times in the progress of the disease. In such cases there is little or no cough; and if the stethoscope be applied, the respiratory murmur is heard, mixed, and occasionally confounded with the dry "rôle sonore."—This state of the bronchial membrane is present in almost every case of typhoid fever, and by no means indicates the existence of inflammation, but arises rather from a more difficult transmission of the blood through the lungs, and a greater fulness of those organs. When, however, incessant cough is added to laborious respiration, and a wheezing sound is heard without, or the mucous or crepitous "rôle" with the stethoscope, there can be little doubt that the mucous or parenchymatous structures of the lungs are in a state of inflammation. In this latter class of cases, the lips and face will be generally found of a purple hue, the mouth and alæ nasi widely distended, and, in many instances, the feet and hands blue or purple.

This complication of pulmonary inflammation with typhoid fever, constitutes perhaps the most certainly fatal form of the disease we encounter in this hospital; and we regret to say that many cases of this description occurred in the winter of the year 1829—30, and considerably swelled our mortality—apparently connected with the extreme severity of the season. In such cases, what is to

be done? Alas!—“*Mussat tacito medicina timore,*” we fear the resources of our art furnish but little hope of relief in this fatal emergency. Blood-letting is certain death, and our only reliance must be placed on blisters, stimulant expectorants, and a regulated allowance of wine. The expectorant the author uses is small doses of ipecacuan, and carb. ammoniæ, repeated frequently, and a spoonful of camphor mixture in the intervals, with a few drops of tinct. opii. Notwithstanding the unfavourable prognostic which must ever attend this complication of typhoid fever, we have seen a few recover from the state above described, under this treatment.

The administration of wine in fever has been the subject of various discussions and disputes among physicians, according as its effects appeared to favour or oppose the particular theory they advocated. Thus our Gallic brethren, in conformity with M. Broussais's principles, wholly reject it from their therapeutics of fever, and regard it almost in the light of a poison; while the patrons of the humoral doctrine look upon it as their great resource.—We shall state the facts furnished by the cases above recorded, in illustration of this important subject.

In the three first cases of primary gastro-enterite, from two or four ounces of wine were allowed, from about the tenth day of the disease to the establishment of convalescence. In the fourth case (an exhausted old woman), wine was allowed on the sixth day after admission, at her own request;—after two days, she acknowledged it did her more harm than good, and refused to continue it. In seven cases of typhus, three of which were typhus miteor

(Boylan, Valentini and Lowry), and four typhus gravior, viz.:—Farrell, Doyle, Martin and Bradshaw, no wine was allowed until the febrile symptoms had suffered an abatement, that is, until convalescence had just commenced; yet all these patients appeared to go on as well without it as could have been expected, had it been allowed. The four fatal cases, whose histories have been given, received each from six to twelve ounces of wine on the five days previous to their dissolution. They were, of course, extreme cases of typhus gravior, but wine seemed to have no effect in retarding or preventing the fatal event. The author had always been an advocate for a moderate and regulated allowance of wine in the last stage of typhoid fever, for, in the first and second stages, its use is wholly inadmissible;—he confesses, however, that his confidence in it has been shaken by the facts here adduced. It appears from these facts, that many cases of exquisite typhoid fever will recover without the aid of wine, and that many will die, however large the quantity be in which it may be administered. The general inference, then, is, that it is either useless or injurious as a remedy. The data, however, it may be said, are too few to overturn the results of long experience, and, according to the strict rule of induction, that they ought to be considered as exceptions restraining the conclusion, not overturning it. This is the light in which the author wishes them to be considered, and in which he regards them himself;—but it should be well considered whether the experience alluded to be unshackled from the prejudices of theory, or whether it be guided by a blind adherence to a sect or

party; for, in such case, experience is of no value—it is worse—it confirms error. With respect to primary gastro-enterite, the author is more decided in his opinion, namely, that wine is seldom necessary or useful, though the three first cases prove that a small quantity may be given with impunity. In the very last or final stage of fever, when death is impending, something must be done—some stimulus must be given—and we possess none more powerful than wine; but, in such cases, the author has always found it unavailing, however large the quantity administered.

The species of fever whose treatment has been now described, viz. the synochus of Dr. Cullen, is the ordinary fever of this country. The perfect typhus in which the synochoid stage is either absent, or very indistinctly marked, is comparatively rare, but does occasionally occur. The principles of its treatment are the same with those described in the typhoid stage of synochus; these have been already explained, and it is unnecessary again to repeat them here.

With respect to opium, it has been so often adopted and laid aside—recommended and condemned by the different writers on fever, that the diversity of opinion on its virtues, proves at least, the uncertainty and inconstancy of its effects. Notwithstanding this, the author has seen it, when administered in a large dose, in great excitement of the brain and nervous system, produce tranquillity and sleep, and manifestly do good; but on many other occasions he has seen it fail; and when it fails it appears to do harm, from the disorder it invariably produces in the

digestive organs. In fevers of a strongly marked synochoid or inflammatory character, opium will generally do harm, and indeed, in all cases where the skin is hot and dry. The author has frequently endeavoured to avail himself of the anodyne and narcotic virtues of hyoscyamus, but he has found this medecine still more uncertain than opium, though employed in large doses. The acetate of morphia seems free from the objection above stated to the other preparations of opium; but how far it may be beneficially employed as a substitute, I have not yet ascertained.

INTERMITTENT FEVER.

Intermittent fever has been a rare disease in Dublin, and we may add in Ireland. During a period of twenty years, through which the author's experience extends, a few incidental cases only of this disease occurred from time to time in his hospital and dispensary practice, and those few were persons who brought the disease from England. —This immunity from intermittent fever of a country abounding in bogs and marshes, has been a frequent subject of speculation to the pathologists of this and the sister country, among whom Dr. Good suggests an explanation of this phenomenon, by supposing that the exhalations evolved from the surface of marshes, abounding in mere vegetable products only, as turf or peat, are free from the noxious qualities possessed by those which contain a pro-

portion of animal matters also. Be this as it may, a singular revolution has taken place in Dublin for the last two years, with respect to intermittent and continued fevers: the latter disease, which for a century, had been the constant scourge of this city, has considerably declined, and intermittent fever has sprung up and occupied its place. For the last four months, however, up to February 1830, intermittent fever has again disappeared, and I am happy to say, without a corresponding increase of continued fever. These facts do not easily harmonise with the established doctrine of the etiology of intermittent fever. We have no reason to conclude that a more abundant extirpation of *malaria* has occurred in the last two years than previously: of late years this city has undergone a signal improvement, both as to the arrangement of its streets, its cleanliness, its pavement, and in an abundant supply of fresh water in all its parts.

The disease seemed to have reached its maximum as to numbers in the spring of 1829, since which time it has gradually declined. The type of fever in every instance, which fell under the author's observation, was quotidian or tertian. In some instances the paroxysm consisted of a slight internal chill, without any external rigor, which, after a limited period, vanished, and left the patient in his usual health; this would return at stated intervals: the duration of the paroxysm in both types of this fever varied from two to six hours. The hours of the access of this paroxysm were from eight, a.m. to two o'clock, p.m.

The author usually prefaced the treatment by an emetic of ipecacuan, after which the sulphate of quinine was given

in the proportion of six grains per diem, in the intervals of the paroxysms.

In fifty or sixty cases treated in the author's wards, not a single instance of failure occurred but one: in this case the disease had been removed in the usual manner by the quinine, but after a convalescence of a few days the patient relapsed, and was again cured by the same remedy, and again relapsed; after three relapses of this kind the disease altered its type, and became remittent, and in this form of the disease very large doses of the quinine were administered without success. The medicine was then laid aside altogether, and the patient was treated by purgatives, local blood-letting, and diaphoretics, and eventually recovered, after a tedious and protracted struggle. The usual harbinger of the cessation of the disease was the change of the hour of access, which in every instance, was from an earlier to a later hour in the day, until the paroxysms finally disappeared. The period occupied by the medical treatment varied from one to three weeks, beyond which it never proceeded. In some cases the period of treatment was protracted by local inflammation, chiefly of the thoracic viscera. In those blood-letting was practised in *the intermission*, presently after which the disease yielded to the influence of the quinine, as soon as the local affection was removed. Where we possess a remedial agent of such certainty as the quinine, it appears a species of empiricism almost criminal, to resort to other means of cure for the mere purpose of experiment or novelty.

The author, however, has ventured in a few cases of robust and athletic persons, to bleed in the cold stage, the

hot stage, and the intermission. The cases were too few in number to warrant any general conclusion; but the impression they made on his mind was, that blood-letting tended to shorten both the duration of the paroxysm and of the whole disease, when used as an adjunct to the quinine, but that it signified little at what period, whether during or between the paroxysms, it was practised.

The intermittent fever, in fine, of this country is a remarkably mild disease; we have no quartans, and none of the “fievres pernicieuses” of France and Italy.

In fixing on a niche for intermittent fever in the system of M. Broussais, our Gallic neighbours have been rather puzzled and at variance with each other: thus some, with M. Broussais himself, call the disease an intermitting gastro-enterite; while others insist that it is an intermittent gastrite;—we shall not presume, “*tantas componere lites*,” among those learned persons; but we cannot avoid perceiving that intermittent fever still continues to be the great stumbling block of the localists, and must ever remain so in our opinion.

INFLAMMATORY DISEASES OF THE LUNGS.

We are indebted to the genius of Laennec for important improvements in the pathology of pulmonary diseases—and there is no part, perhaps, of practical medicine, which exhibits modern industry in a more favourable point of view.

With respect to the stethoscope, highly ingenious as the application and discovery of this instrument unquestionably are, yet we fear that Laennec attached too much importance to it as an instrument of diagnosis, and that in labouring to elevate his favourite discovery to the dignity of a science, he has occasionally deviated into the regions of fancy, and been indebted to the fugitive creations of that active faculty for some, at least, of those acoustic phenomena which he represents as permanent and infallible diagnostic signs.

From the works of an eminent and able living writer of France (Dr. Bosseau), whose writings prove him to be perfectly qualified to pronounce an opinion on this subject, and whose evidence will hardly be accused of prejudice, on a question where national feeling is apt to interfere in behalf of national discovery, we extract the following remarks on the stethoscope:—"When Laennec first exhibited the stethoscope, people expected to be able to read, as it were, by this instrument what passed in the chest; a little further observation, however, has taught us that its signs are obscure, uncertain, and not to be depended on without the symptoms. In phthisis, this instrument is incapable of discovering tubercles, until they become hollow cavities, when their discovery is of little use.— The pathognomonic stethoscopic signs of phthisis are the cavernous voice, and *souffle a l' oreille*, which cannot be heard until the cavity of the tubercle has acquired a considerable magnitude, that is, in fact, until the tubercle has ceased to exist."*

* "Nosograph. Organ." vol. ii. p. 483, *et infra.*

This is going to the utmost limit that strict justice and truth will warrant in depreciating the stethoscope ; for we do not hesitate to say, that on the whole we consider it an instrument of considerable utility and value in discriminating diseases of the chest, particularly those of the heart, and that it is an important acquisition to medicine. We have been led into the above remarks by the desire of repressing unreasonable enthusiasm on the one hand, and on the other, that disingenuous system of puffing, by which some persons affect, if not to read, at least to hear more than their neighbours by this instrument. We fear that in many instances an implicit reliance on stethoscopic indications has induced a neglect of the symptoms, and thus been productive of mischief.

The human lungs are composed of three distinct structures or tissues, viz. : the mucous membrane, lining the interior or bronchial tubes ; the serous membrane, investing the exterior surface ; and the parenchyma or middle substance, which anatomists believe to be composed of the minute ramifications of the bronchi, connected together by dense cellular substance. Of these structures the diseases which affect the mucous membrane are by far the most important, at least so far as regards hospital practice—and they constitute, at all times, a considerable portion of the mortality of this hospital. The mucous membrane of the bronchi, being an expansion or continuation of that which lines the nostrils, mouth, fauces, larynx, trachea, &c. all the subdivisions of this membrane considered as a whole are connected by sympathetic relations ; but it possesses one peculiar and characteristic attribute, by which it is

distinguished from the other great divisions of the general mucous surface, namely, that through its whole extent it is exposed to, and in contact with the external air ; from which circumstance most of its modifications of disease are derived. These diseases vary in name and character, according to their seat, or division of the membrane chiefly affected ; but those which most frequently occur in this hospital are catarrh, and the more intense form of bronchial inflammation, which we shall distinguish by the name of acute bronchitis, or bronchitis gravior.

CATARRH. BRONCHITIS.

Catarrh may be divided into two species, distinguished by the presence or absence of fever, modifications which arise from the different intensity and extent of the irritative inflammation which constitutes its essence. It is unquestionably the most common of all diseases ; under the name of a cough, a cold, &c. it is the constant torment of the delicate and aged, a vast number of whom it ultimately leads to the grave, either by inducing bronchitis gravior or genuine phthisis, or by passing into the chronic form, in which it assumes all the external characters of phthisis. Catarrh is a disease of the winter and spring ; it rarely affects even the predisposed in the other seasons, unless in particular cases of idiosyncracy, as in the case of Dr. Bostock, related by himself* ; its eteology, therefore, presents little

* *Médico-Chirurg: Trans.*

difficulty—any powerful irritant, even a mechanical one, applied to the naso-bronchial mucous membrane will produce it.

Dr. Cullen, who was the great patron and advocate of solidism, in this country, appears on some occasions to lapse inadvertently into humoralism; of which he was the decided opponent; of this we have a striking example in his pathology of catarrh, which he describes as arising from an "*afflux* of fluids to the mucous membrane."— This *afflux* of fluids appears to be hypothetical, and very doubtful; and we conceive that the phenomena of this disease are much more naturally explained by the laws of irritation and sympathy, as before observed. Cold and damp air, harsh and piercing winds are the ordinary causes of catarrh in our climate, and the abrupt transition from hot fire-sides and heated rooms to such an atmosphere, When it prevails in an epidemic form, under the name of influenza, we believe *malaria* to be its chief exciting cause. It has been supposed by some, that the transition from a cold to a hot atmosphere is as frequently the cause of catarrh as the opposite; but though a very intense degree of atmospheric heat may, occasionally, produce catarrh, we have reason to believe, from a long and attentive observation of the disease, that heat is seldom its exciting cause.

It is a question of considerable importance in the pathology of catarrh, to determine whether the exciting cause produces its effect by acting primarily and directly on the membrane itself, or by the transmission of sympathetic irritation from the skin. To enable him to form a proba-

ble conjecture on this subject, the author has repeatedly made experiments on a delicate individual of his family, strongly predisposed to catarrh, by wrapping up the whole body in fur, and covering the face with a fur mask, in which a single aperture only was left, for the performance of respiration. Thus prepared, the individual alluded to, was exposed for a considerable time to an atmosphere at the freezing temperature, on a winter's night, with impunity ; whereas, when exposed without the protection already mentioned, fifteen minutes were generally sufficient to produce catarrh. We conclude, therefore, that it is commonly through the medium of the skin, that this disease is produced, which is a point of considerable importance in relation to prophylaxis.

With respect to the treatment of catarrh, the author has little to add to the ordinary method. The febrile catarrh is treated like common inflammatory fever. For the non-febrile catarrh there is one remedy which stands recommended by the high authority of Laennec, namely, hot punch, taken when stepping into bed at night, which, if it prove successful, combines in itself all the perfections of the therapeutic art, for it cures "*cito, tuto, et jucunde;*" and we have no doubt but that the physician who could cure diseases by nightly libations of this beverage, would soon become very popular among our countrymen. The author has been assured by several credible persons that they were cured of catarrh by this remedy, and he has no doubt, therefore, of its efficacy, in particular cases ; but it is evidently unsuited to very delicate persons, or females of a respectable class, who are so frequently the victims of

this disease ; also to persons who labour under disorders of the stomach and liver. When coryza, or defluxion from the nose, is the most distressing symptom, those who will submit to the application of leeches to the septum naris, and holding the face frequently over hot steam, and inhaling it through the nostrils, will receive a mitigation, if not a complete removal of this distressing symptom ; but the most effectual remedy, on the whole, is a sudorific at night, with an abundance of the ordinary warm diluents. When cough is its most distressing symptom, the only certain remedies we possess to mitigate its violence, are ipecacuanha and opium—the various modes of exhibiting which are familiar to every practitioner. The author has found a solution of a grain of the acetate of morphia in four ounces of syrup, and given in doses of a tea-spoon-ful from time to time, succeed in removing a very troublesome cough, even without any nauseating adjuncts.

Catarrh frequently exists in a latent form, particularly in summer, in persons strongly disposed to the disease, and in those subject to frequent fits of dyspnœa ; and one of the most striking examples of the utility of the stethoscope consists in its capability of detecting this obscure state of the disease.

Before we proceed further, it will be necessary to say a few words in explanation of the nomenclature we have adopted.

It is well known that the most intense form of bronchial inflammation was distinguished by Dr. Cullen and some of his predecessors, under the name of “ peripneumonia notha,” which was believed, and in many instances, we

think, correctly, to be a mixed inflammation of the mucous and parenchymatous structures of the lungs. By Laennec all the varieties of this class of diseases are ranged under the head of catarrh, and its most violent forms, distinguished by the additional appellatives of acute, pituitous, and suffocative catarrh. In the present times, the term catarrh has been altogether exploded from the nosological vocabulary of the French writers, and this numerous class of diseases arranged under the generic title of bronchitis. This nomenclature, we believe, to be the most correct, and most accordant with modern practice; but it has not as yet been generally adopted in this country; for which reason we have adhered to the term catarrh, as most familiar to our ears, and best understood, and which we employ to designate the mild varieties of this disease; but its most intense form identical with peripneumonia notha of Sydenham and Cullen, we denominate acute bronchitis, or bronchitis gravior. This disease, though it most frequently affects the aged and infirm, we believe, to be by no means peculiar to that age, as we have seen several instances of its occurrence in middle life.

Two questions of considerable interest and some practical importance present themselves for consideration here — 1st. Is this intense form of bronchitis ever simple, or is it always combined with peripneumony, according to the pathology of Dr. Cullen? 2d. If simple, are there any signs by which we can distinguish the two diseases? The author is of opinion that this disease is frequently simple, but he admits also that it is occasionally complicated with peripneumony; and he is inclined to think that

the bronchitis of old age is most generally the simple form of the disease; and that peripneumony, which is a disease of youth and strong fibre, is more frequently the adjunct to bronchitis in this latter age. The symptoms peculiar to intense simple bronchitis are as follows:—a livid and bloated appearance of the face and lips; cough with a viscid, tough, but abundant expectoration, of an albuminous and frothy appearance, and seldom or never tinged with blood; the cough returning in heavy fits, during which the face becomes purple and bloated, and the abundance of expectorated mucus seems to threaten suffocation, until it is discharged, which is effected with much difficulty; tightness and stricture of the chest, rather than pain, which patients describe, as if the chest was bound round by some restraining power; a loud sonorous roll or wheesing, audible by the naked ear, or a mucous gurgling, resembling the rattles of death; the labour of the muscles of respiration, and the efforts to expand the chest, more violent and convulsive than in peripneumony; the pulse frequent, weak, and irregular. When the inflammation extends to the minute ramifications of the bronchi, the disease passes into peripneumony, and the diagnostic signs of both diseases are confounded, and blended together; this constitutes, of course, the most fatal form of the disease. When the stethoscope is applied below the bifurcation of the bronchi, some of the numerous varieties of the “*rale sonore*,” so fancifully described by Laennec, are heard, or the respiration is inaudible over the most inflamed spot. The crepitous “*rale*,” which Laennec describes as the peculiar and pathognomonic physical sign of peripneumony is sometimes present in bronchitis, and then

is supposed to indicate an œdematous state of the lungs. The two following cases will serve as illustrations of the disease, as it usually presents itself in this hospital. The last, I conceive, to be an instance of the complicated bronchitis and peripneumony.

CASE I.

Thomas Venables, aged 70. Admitted Jan. 15, 1830.

January 16. He is a large robust man; states that he has been subject to cough for many years; but has been more severely attacked this winter than before; about ten days ago became very ill; his breathing is quick and laborious, attended with a loud sonorous and mucous rattle, audible at a considerable distance; his face is rather bloated, and his lips purple; has a distressing cough, which he says attacks him by fits, during which he expectorates a great quantity of frothy mucus, which gives him a transitory relief; complains of tightness and pain in his chest; pulse is quick and rather weak; tongue white; furred. *V. S. ad unc. viii. empl. vesic sterno. Solnt. tart. emetic.*

17. Breathing improved; vomited two or three times; blister did not rise well, but says he feels less pain and tightness of chest; pulse and tongue as yesterday; stethoscope presents nothing but the sonorous and mucous rattle; chest sounds well on percussion. *Solut. tart. emet. empl. vesic. inter scapulas.*

18. Going on well; cough still distressing; tartar emet. did not produce vomiting. *Ipecac. g. ii. om. hor. ii.*

19. Says he was much distressed by the cough last night, and that the pain of his chest has returned ; his breathing, however, is evidently less oppressed ; stethoscopic signs as before. *Appl. cucurb. cruent sterno, et abstrahant. unc. viii. sang's. Cont. pulv. ipecac.*

20. Better ; pain of chest removed ; pulse still quick ; tongue white. *Ol. ricin. pulv. ipecac.*

21. Much better to-day ; requests some solid food.

22. Convalescent.

This patient remained a considerable time in the hospital, being affected with severe cough, and the usual symptoms of the disease in a chronic form.

CASE II.

Patrick Norton, aged 50. Admitted January 5, 1830.

January 6. States that he was attacked by his present illness about three weeks ago, when he got cold, as he thinks, by working in a damp cellar (a labourer) ; he was at first affected with severe cough and spitting, which gradually grew worse ; his face is swollen and purple ; his feet and hands are also purple ; his respiration is short, hurried and laborious, with an incessant short cough ; pulse nearly natural as to frequency, but weak ; tongue loaded with dark white fur ; on applying the stethoscope, respiration was lost in all the lower part of the chest, and audible only at the upper part of the sternum ; his intellect is clear, and he is not conscious of his approaching death ; he complains of weakness, and requests some solid food. *Empl. vesic. sterno. Mist. camphor. Vini unc. iv.*

Died in thirty-six hours after admission.

Several fatal cases of pulmonary inflammation, very similar to the above, occurred in the month of January, 1830.

The chief nicety in the treatment of acute bronchitis is to determine the extent to which blood-letting ought to be carried, as in old and infirm persons, who are most frequently the subjects of this complaint, the lancet is evidently to be employed with caution and moderation. As to the other auxiliary remedies, I consider the tartar emetic solution as useful in this disease as in peripneumony; it is apt, however, to lose its emetic and nauseating properties after a little time, from which, in my opinion, its curative virtues are principally derived; in such cases, it may be usefully alternated with the compound squill pill, or small doses of ipecacuanha or emetin frequently repeated.

PERIPNEUMONY.

The anatomical characters of peripneumony are admirably described by Laennec, who divides the disease into three stages, in relation to the organic changes which succeed each other, viz.: 1st, the stage of obstruction, (engorgement); 2d, the stage of hepatisation or solidification; 3d, the stage of purulent infiltration. In hospital practice, when peripneumony becomes the object of treatment at a sufficiently early period, it is perhaps the least fatal of the pulmonary diseases, as those persons who are its

usual subjects, viz. the young and vigorous, bear depletion well, and blood-letting we regard as the chief, if not the sole remedy. The following cases will illustrate the form in which peripneumony usually presents itself.

CASE I.

John Maher, aged 35 ; admitted April 7, 1829 ; labourer ; a robust muscular man ; third day of illness.— States that he was lately exposed to wet and cold in travelling from a distant part of the country ; complains now (April 8,) of deep seated pain of the chest, shooting occasionally to left side ; his breathing is short, hurried and laborious, with a short teasing cough, attended with small expectoration ; the expectorated matter is tough and tenacious, and adheres to the bottom of the vessel ; it is of different colours, sometimes tinged with blood, sometimes brown, sometimes yellow ; pulse 110, hard and wiry ; face, and particularly cheeks and lips, flushed and red ; tongue loaded with yellowish fur, but red at edges ; cannot lie on right side, though that is the one least affected. *V. S. ad unc. xvi. Solut. tart. emet.* Bleeding to be repeated in the evening, unless pain and dyspnea completely removed.

9. Bled twice yesterday, as directed ; blood thickly buffed and cupped ; tartar emetic made his stomach very sick ; says he is better ; his pain and dyspnea are much relieved ; cough also much better ; stethoscope was not applied yesterday, but on its application to-day, the respiratory murmur is audible over the whole chest, except under sternum, where it is obscured by a sonorous rattle ;

no crepitous rattle is audible; sound by percussion is good, except on left side of chest, where it is rather dull; pulse is more full and less frequent than yesterday; face not at all flushed, but a slight circumscribed redness on cheek.

V. S. ad unc. xii. empl. vesic. sterno. Solut. tartar emet.

10. Considerably better; all the urgent symptoms fast declining; blood thinly buffed. *Solut. tart. emet.*

11. Declares that all his distressing symptoms are removed, except the cough, which is a little troublesome still.

Ipec. g. ii. om. hor. iii.

12. Convalescent.

CASE II.

William Bailey, aged 47; admitted December 12, 1829.

Dec. 13. Sixth day. Complains of pain in the whole right side of chest, from the sixth rib upwards; respiration is short, quick and difficult; cough frequent; he expectorates pretty freely a tenacious matter tinged with blood, which adheres to bottom of vessel; the sputa appear to come from a particular part or cavity of the chest; on applying the stethoscope, a loud sonorous and mucous rattle are heard, which latter occasionally become crepitous, but these sounds mix and confound each other; on applying the tube over the seat of pain, I fancy I hear a hollow sound, and the voice appears to pass through the axis of the instrument; pulse is quick, weak and irregular; tongue white. *V. S. ad unc. xii. Solut. tart. emet.*

14. Pain of chest much relieved by the bleeding of yesterday, as well as all the other symptoms; blood buffed,

not very serous; stomach not sickened by tartar emetic.

V. S. ad unc. xii. Solut. tart. emet. Empl. vesic. sterno.

15. Much improved; pulse soft and less frequent; says he feels no pain to-day; cough and dyspnea less troublesome; blood drawn yesterday buffed and cupped, with small coagulum, and a large proportion of serum; tartar emetic did not vomit, but purged him; sputa free from blood; stethoscopic sounds nearly the same. *Mist. expect. ex ipec. et Scillâ.*

16. Improvement of yesterday not permanent; respiration is very laborious; pulse quick and weak, but soft; he moans and talks incessantly in his sleep, but is not delirious when awake; he has the aspect of much anxiety and distress; his countenance is rather pale; lips and cheeks red; on examination with the stethoscope the predominant sound is the "rale sonore," but there is also a mucous rattle, which becomes sometimes crepitous, as before described; cough distressing. *Appl. cucurb. cruent. sterno et capi'r. unc. viii. sanguinis. Empl. vesic. inter scapul. M. expectorans.*

17. Much better; pulse 90, regular and of good strength; respiration and cough much relieved; he was bled from the arm, the cupping classes being out of order; crassamentum slightly buffed; pain of chest removed, but feels some tightness and restraint still; sleeps more quietly.—

V. S. ad unc. x. M. pectoral.

18. Much better. *M. pector.*

20. Convalescent.

Had I been governed by the stethoscopic signs in this case, I should have been much perplexed as to the diag-

nosis. The inference to be drawn from the first exploration was, that a cavity or abscess existed in the right lung; yet the rapid and perfect recovery of the patient showed that no such abscess could have existed.

PLEURISY.

Arthur Bignel, aged 69; admitted April 8, 1829; third day of illness.

9th. Complains of acute pain in right side about fourth rib, with severe cough; unable to cough from excess of pain; expectorated mucus small in quantity, white and ropy; on applying the hand externally to the side affected, he feels it sore and tender to the touch; right hypocondre rather tumid, and epigastrium and margin of ribs tender to the touch; on applying the stethoscope over the painful point, the respiratory murmur is inaudible, and the sound is dull on percussion; respiration is good on left side; pulse not very frequent, (about 99,) hard and wiry. *V. S. ad unc. xiv. Solut. tart. emet. Twelve leeches to be applied in the evening over the painful part of the side.*

10th. Considerably better; blood buffed; he says the stitch in his side is nearly gone; on applying stethoscope, respiration is audible in right side; coughs and expectorates more freely. *Empl. vesic. lateri. Solut. tart. emet.*

11. Much better; pain and oppression of breathing entirely removed; blister rose well.

12. Convalescent.

In cases similar to the above, where an affection of the liver may be combined with that of the pleura, and doubts may arise whether the pain of the side be primary or sympathetic, the stethoscope is of considerable value, as the presence or absence of respiration in the side will determine this point almost with certainty.

PERICARDITIS.

James Byrne, aged 27; admitted December 15, 1829; a very stout muscular man, a tanner by trade.

16. States that he feels a severe pain in left side, about sixth or seventh rib; is ill about a week, and had previously enjoyed good health; the pulse is a little quick, but in other respects nearly natural; respiration not at all affected; on applying the stethoscope, the respiratory murmur is inaudible over the whole anterior part of the chest, and nothing is heard but the action of the heart, which is particularly strong at the lower part of the sternum; little or no cough. *V. S. ad unc. xii. Solut. tart. emet.*

17. Very little blood flowed from the arm yesterday, on the attempt being made to bleed him; his pulse to-day is small, weak and irregular; stethoscope produces the same results as yesterday; the pulsation of the heart alone is audible over the whole chest; still complains of pain in left side, but says it is a little better; *tart. emet.* sickened, but did not vomit him. *Hirudin. xii. parti. affect. lateris.*
Solut tart. emet.

18. Improved as to his pulse, but the pain in his side still continues. *Empl. vesic. lateri. Mist. expector. cum. tinct. digital.*

19. As yesterday. *Mist. expect. cum. tinct. digit.*

20. Says he is better, but no material change in his symptoms, except the pulse, which is improved.

21. Still complains of severe pain in his side. *V. S. ad unc. xii. M. expect.*

22. The blood flowed freely yesterday, and his pain is much relieved; blood shows no buff; the action of the heart still alone audible by the stethoscope; on the left side there seems a rather obscure "*bruit d' soufflet*"; the pulse is now regular and of good strength; he says the pain is much less violent, but not entirely removed.

24. Convalescent.

In this case the respiratory murmur could not be heard, even in convalescence, when all pain had subsided. This patient was remarkably full and muscular, and the walls of the chest were very thick; but this circumstance is inadequate to explain the phenomenon.

INFLAMMATORY DISEASES OF THE ABDOMINAL VISCERA.

Case of Enteritis, in which the extremity of the Ileum was found strangulated by the Appendices Epiploicæ.

Margaret Lyons, aged 30; admitted May 31, 1829; third day of illness.

June 1. Complains of excruciating pain of abdomen, which is increased by the slightest pressure ; abdomen is rather tympanitic ; pulse quick, weak and irregular ; countenance anxious ; bowels obstinately constipated ; tongue loaded. *V. S. ad unc. xx. Calomel et opium, et enemata. purg. Twenty leeches to be applied to abdomen in the evening, with a warm bath.*

2d. No improvement ; got twenty grains of calomel, and several purgative enemata, without effect ; pulse weak.—*V. S. ad unc. xvi. Calom. et opium. Twenty-four leeches to the abdomen in the evening.*

3d. No amendment ; she vomits frequently ; got thirty grains of calomel since yesterday, without any observable effect on gums or otherwise. *Hirudin. xxiv. abdom. statim. et vesp. empl. vesic. amplum.*

4th. Not better ; blister gave her much pain ; she is now delirious, and vomits incessantly.

Died on the morning of the 5th.

I felt so intense an interest in this case, that I was determined to omit no exertion to procure an examination of the body. I accordingly sought out the patient's residence, explained to her friends the nature of her case, and earnestly requested they would permit me to examine the body after its removal from the hospital. The request was complied with, and the dissection performed by my friend, Surgeon Trant, in my presence.

On opening the abdomen, we were soon directed to the seat of the disease by a remarkable blackness, which presented itself in the lower portion of the ileum, where it is connected with the cæcum. On examining this portion of

the intestine accurately, we discovered that it was strangled in an extraordinary manner, by a membraneous band or chord, which embraced it tightly, and completely prevented the passage of fæculent matter. It was at first imagined that the stricture was effected by a convolution of the appendix vermi formis, but on further examination, it was ascertained that the stricture was formed by two of the appendices epiploicæ attached to the cæcum and colon, which descended over the extremity of the ileum in a singular manner, and enveloped it in a loop, which completely annihilated its cavity. The whole of the peritoneal coat was in a state of inflammation, and the omentum, which was red and vascular, adhered to the intestines in several points.

Thus I had the satisfaction of ascertaining that no remedies which our art can furnish, could have been of any avail in this case.

PERITONITIS.

Mary Molowney, aged 30 ; admitted December 7, 1829.
Four days ill.

Dec. 8. Labours under the following symptoms : violent pain over the whole epigastric and umbilical regions, which are painful on the slightest pressure ; says the pressure of the bed-clothes is painful to her ; the pain she describes as intermitting, abating, and returning at intervals ; bowels constipated ; pulse 104, hard and wiry ; tongue white ; no

vomiting, but a slight degree of nausea. *V. S. ad unc. xx.*
Colom. et opium. Bal. tepid vesp.

9th. Pain considerably relieved, but tenderness of abdomen remains, and impatience of pressure; bowels have been opened two or three times. *V. S. ad unc. xii. Ol. ricin. Twenty leeches to abdomen in the evening. Calomel et opium hor. som.*

10. Attempt to bleed yesterday failed, as little or no blood flowed; leeches succeeded well; she is much better; abdomen still a little tender, and gums are slightly affected. *Ol. ricin. Fatus abd.*

11. Says she is quite well to-day, and requests some solid food; abdomen soft and free from pain.

12. Convalescent.

DYSENTERY.

The worst cases of dysentery occurred in the spring of 1829, and accordingly the disease constituted a considerable portion of our mortality at that period. Thus in the wards under the author's care, out of thirteen deaths which occurred in the months of April and May, 1829, four were from dysentery.

These patients had been in the hospital for some time previous to the author's attendance, and their cases, which would have been incomplete, were not taken down; they were persons advanced in life, who had laboured under the disease for several months in a chronic form. In the

months of December and January 1829-30, a number of dysenteric cases also occurred ; but the disease wore a much milder character than in the spring, and none proved fatal.

The poverty, general distress, deficient clothing, and bad diet of our poorer population, have exposed them to the attacks of this disease to a much greater extent than has fallen to the lot of their more fortunate neighbours of the sister isle ; and as those evils date their origin from a very remote period in our history, so is the prevalence of this disease of high antiquity among us. It has been supposed by many, that the dampness of our humid western atmosphere has been the chief cause of dysentery in this country ; but there is little foundation for this opinion, as the disease has been known to prevail more extensively in hot and dry, than in wet seasons. As little foundation is there for the opinion, that the potato diet of our humble classes is the chief exciting cause of dysentery ; for it is ascertained that the disease prevailed in this country long before the introduction of this vegetable.

Two remarkable epidemics of this disease prevailed in Dublin within the last twenty years ; the first in 1818, the latter in 1825 ; both exceedingly fatal. On the last occasion it was calculated by the author, from data, however, not very exact, as we possess no separate ward for dysentery, that the mortality from dysentery was about one in four, which is nearly four times greater than the mortality from typhoid fever.

By a report published in the Edinburgh Medical and

Surgical Journal,* by Dr. Cristison, it appears that the mortality in the Royal Infirmary, Edinburgh, from dysentery, in an epidemic which occurred in that city in the year 1828, was also about one in four. In Glasgow, it was about one in nine. In Dublin, the violence and mortality of this disease vary considerably, and on no previous or subsequent occasion was the mortality known to be so high as in 1825.

Dysentery is an inflammation of the mucous membrane of the colon or rectum, or both ; its proper title, therefore, according to the modern nomenclature of the phlegmasiæ, is colitis, or recto-colitis ; by the first of which names it is designated by Dr. Ballingal, and by all the modern French writers. Its modifications depend on the extent and intensity of the inflammation.

A theory of dysentery, which ascribes to the liver the exclusive agency in generating this disease, has been maintained by a learned modern writer and reviewer, himself an author and the censor of authors—under the influence of whose inquisitorial authority it flourished for a time. In a work published some years ago, the author of this report ventured to object to this theory, on the ground that it was supported neither by symptomatology nor dissection. In noticing the work, the learned reviewer did him the injustice to misrepresent and distort the passages unfavourable to his own theory ; the author, however, has the satisfaction to find, that his opinions on the subject have been adopted by the best writers who have since treated of this disease, and to use the words of the learned

* January, 1829.

Dr. Good, that the hepatic theory of dysentery has been “completely unhinged.”*

Mr. Bamfield, however, whose work on tropical dysentery cannot be too highly commended, had previously called in question the theory above-mentioned—a fact of which the author was not aware at the time of publishing the treatise above alluded to, not having seen Mr. Bamfield’s work.

It appears by the testimony of the most experienced practitioners both of Europe and India, that there is, however, a species of dysentery which traces its chief exciting cause to functional or organic disease of the liver; this is called by Mr. Annesley *hepatic dysentery*, and is the bilious dysentery of Stoll and Zimmerman. The existence of this species of dysentery we admit, but its mode of production is easily explicable, without the aid of much speculation or theory, namely, we believe that it is produced by the direct contact of morbid acrid biliary secretions, a superabundance of which is apt to be generated in all climates and seasons of high temperature.

This treatment of dysentery recommended by our Gallic brethren is the very antipodes of ours; they neither employ general blood-letting, purgatives nor opium; and some are loud in their censures of Sydenham, for introducing this latter remedy. M. Pinel, who is in this instance closely followed by M. Broussais, gave one or two mild laxatives in the beginning, and subsequently little else than a liberal allowance of gum, and mucilaginous

* Study of Medicine, voi. li. p. 556, (second edit.)

diluents ; in addition to those remedies, M. Broussais applied leeches to the abdomen and the anus.

By this treatment M. Pinel boasts, (and we cannot doubt a testimony so respectable,) that in an epidemic dysentery which occurred in one of the great hospitals in Paris, he cured two hundred patients, without a single death. The author of this report agrees with the French practice so far, that he believes opium to be injurious in the acute dysentery, unless combined with calomel or some other purgative, or unless succeeded by purgatives.

Even in chronic dysentery he is of opinion that it should be employed with caution and circumspection, and never so as to produce a sudden check to the disease, which, in most instances, is fatal. He is anxious, in fine, considerably to qualify the eulogies which he formerly published on opium, of whose virtues a more extensive experience renders him less confident ; he would apply the same observations to all other astringents.

He is aware that opium in large doses, (four or five grains) stands recommended by the high authority of Dr. Cheyne, for whose judgment and talents he feels the highest respect ; but those who wish to imitate this practice ought to recollect that Doctor Cheyne does not say that he ever tried large doses of opium, but only that he would not hesitate to employ them, if similar cases should afterwards occur ; this makes a material difference, namely, that between actual experience and conjecture. The practice, I believe, has been lately tried in Edinburgh, and the result does not encourage its repetition.

With respect to mercury, the author still entertains a

favourable opinion of that remedy, which has succeeded in several cases during the past year.

The author has stated, in a report published by him on the epidemic dysentery of the year 1825, in the last vol. of the Transactions of the Medieal Association of the Fellows and Licentiates of the College of Physicians, that large doses of calomel were necessary in that epidemic, for producing the full effect of the remedy on the constitution. An ingenious and able modern writer, who stands deservedly high among the pathologists of our country, (Dr. Abercrombie,) objects to large doses of mercury, as unnecessary in the dysentery of our climate; but as Dr. Abercrombie admits that his experience in the treatment of this disease was limited, we request he will suspend his opinion, until he shall have encountered the difficulty of treating a destructive epidemic, similar to that above alluded to, which, in many instances, equalled the violence of the tropical dysentery. The admirable account published by Dr. Latham, of the epidemic at the Millbank penitentiary, presents a lively picture of this difficulty, and of the excellent effects of large doses of calomel.

In the cases of dysentery which occurred in the months of December and January, 1829-30, (which, however, as before observed, were of a mild character,) small doses of ipecacuanha were administered with considerable success, jointly with an abundant supply of a solution of gum and mucilage, according to the plan of M. Pinel. Ipecacuanha had enjoyed a high character in former times, as an anti-dysenteric remedy, and under the patronage of the celebrated Helvetius, it was regarded as a specific for this dis-

ease ; in latter times it has undergone several revolutions in its therapeutic character, but it really appears to possess considerable powers in this disease.

DISEASES OF THE STOMACH AND LIVER.

Nothing can more clearly show the fashion of medicine, its fluctuations, and its complete subjection to the caprice of theory, than the revolution which has taken place on the subject of bile and biliary disorders.

Some twenty years ago, the liver was regarded as the centre and focus of almost all human maladies, and the bile as the source and fountain of every corporeal, and even mental ill. We can easily remark a tendency at the present day, to rush into another extreme ; bile and the liver begin to be neglected and forgotten as the chief authors of our misery, and the stomach is now regarded as the most prolific source of human disease, and every ambiguous malady is a gastro-enterite. This revolution of opinion is more distinctly observable among our Gallic neighbours ; but we think we can perceive evident signs, that it has commenced, and is in progress among ourselves. Now, we believe the fact of this matter to be, that truth lies between those extremes ; and, though we are ready to admit the powerful agency of the stomach in generating diseases, yet we conceive disorders of the liver, whether functional or organic, to be to the full as prevalent now as they were twenty years ago, and as fruitful of other diseases.

The liver being the most important subsidiary organ to digestion, that great process by which the human body is nourished, supported, and invigorated, its functions are so intimately associated with those of the stomach and duodenum, the laboratory where this essential process is completed, that the slightest disease of any of those viscera produces a corresponding one in the rest, agreeably to the laws of sympathy; and these again, by a reflex action, aggravate the disease of that viscus, which originally produced the secondary effect. We deem it highly probable, and indeed, self-evident, that in this circle of morbid actions, the disorders of the stomach take the lead; and secondarily, involve the liver; but we believe, that in every case of serious disorder of the stomach, this secondary effect does actually take place. Now, when we examine the causes, which are chiefly instrumental in producing the disorders of these associated viscera, we find them to operate in the following order:—1st, Intemperance generally, both in meat and drink; and 2dly, mental anxiety. We do not pretend to say that there may not be other causes, but we consider those to be by far the most powerful. The second article in the first division of those causes, viz. intemperance in spirituous liquors, is the principal source of hepatic and stomachic diseases, among our lively, social, but very imprudent and thoughtless countrymen of the lower class, whilst we believe intemperance in food, particularly animal food, to be the principal cause of hepatic diseases among the higher classes, though in many instances, both species of intemperance are united. When the stomach is inordinately excited by a quantity of

highly stimulating food or liquor, it rapidly propagates the excitement to the liver; and thus, a state of irritation and vascular fulness is produced in both those viscera, which, in process of time, passes into the state of subinflammation, or as it is termed, chronic inflammation; and finally, after a further lapse of time, into obstruction, induration, and schirrus.

Acute hepatitis, though a common disease in hot climates, is, on the whole, a rare disease in our climate; but the chronic form of the malady is exceedingly common.—Of this latter form of the disease several instances occurred in the wards of this hospital in the course of the preceding year. In one of those a female patient, who had been discharged from the Lying-in-Hospital, about a month before, but who now laboured under ascites and indurated liver;—a perfect cure was effected by repeatedly leeching the right side—by a gradual and cautious introduction of mercury into the system, and by moderate purging.

In the case of a female patient named Flynn, admitted in May, 1829, the indurated liver was found to fill the whole of the scrobiculus cordis, and descend below the margin of the ribs, with prominence of the right hypochondre and jaundice—by the repeated application of leeches and blisters, and gentle purgatives, a considerable reduction in the volume of the liver was effected, and she was dismissed relieved. In about two months, however, this patient returned, labouring under anasarca, under which she rapidly sunk.

An example of what is termed the black jaundice occurred in the person of a female patient named Murphy,

admitted in August, 1829, advanced in life; the skin in this case was of a dark yellow hue, a shade between black and yellow, and presented an extraordinary appearance; the liver was found to project across the epigastrium laterally, and downwards below the margin of the ribs. This case terminated fatally.

In the case of a male patient under the care of one of my colleagues, in a ward adjacent to mine, a singular modification of schirrous liver occurred, which may be worthy of notice, as a curious and anomalous degeneration of that viscus very rarely observed. In this case the liver filled the epigastrium as above described; but it was so completely altered from its natural consistence, that it presented to the touch the rigidity of horn or bone. On this patient's death I solicited permission to open the body, when conveyed out of the hospital, but it was refused.— The edge of the liver in this case was probably converted into cartilage. As the liver may be increased or diminished in bulk in chronic hepatitis, the diagnosis is easily made in the former case, but with more difficulty in the latter. In this instance percussion affords valuable assistance; the sound of the inferior ribs in this case is as clear as on the left side, which will afford a strong presumption of the state of the organ, when coupled with the other usual symptoms of chronic hepatitis. Actual measurement of the right semicircle of the body, comparatively with the left, will also assist the diagnosis, as a slight depression of the floating ribs generally takes place. For examining the liver by the touch, the reader will find some excellent rules in M. Andral's essay on the liver, prefixed

to the 4th vol. of his "Clinique Medicale." Jaundice is by no means a pathognomonic symptom of chronic hepatitis: in the case of cartilaginous liver, above-mentioned, jaundice did not exist.

Persons labouring under chronic hepatitis are subject to frequent attacks of slight fever, the real cause of which, in the incipient stage of the disease, escapes not only the patient himself, but sometimes also his physician, as it is often attended with no aggravation of the local symptoms. These fevers are removed quickly by purging, particularly by calomel. Authors dwell with emphasis on the pain of the right shoulder and scapula, which accompanies chronic hepatitis—and this, no doubt, is a very constant symptom of the disease; but it also frequently happens that next to the pain of the side, the most distressing pain is felt in the os-ilium and hip on the right side, which is sometimes so severe as to give the patient a lame step—the author has met with several instances of this.

No case of acute hepatitis occurred in the author's hospital practice during the past year; we shall not, therefore, make any observation on its treatment, but confine ourselves to the chronic malady, which as formerly observed, is to us the more important disease.

M. Broussais's therapeutics in chronic hepatitis are as simple as in gastro-enterite, namely, leeches and "*diete absolue*." In this instance the author cannot help concurring with M. Broussais, that the plan above-mentioned presents the best chance of a radical cure, and is the surest palliative. Mercury undoubtedly affords relief in the incipient stage; we doubt if it ever has effected a cure

without a strict regulation of diet. Its remedial effects are transitory, and after every occasion of its employment to any extent, the disease seems to gather new strength in its subsequent paroxysms, and unerringly returns, when the proper dietetic injunctions are neglected or forgotten. Persons affected with, or disposed to chronic diseases of the liver, should abstain altogether from spirituous and fermented liquors, and content themselves with simple water as their ordinary drink, or at most with soda water. Of animal food they ought to eat very sparingly, and never of roasted meats, or fatty and oily substances, which invariably disorder the dyspeptic stomach; and when the disease is so serious as to become the subject of regular medical treatment, nothing but a milk and vegetable diet should be allowed. Purgatives irritate the liver and digestive organs, and are not necessary, unless fever or jaundice accompany the disease. Laxatives, however, are absolutely necessary, and the best we know are rhubarb and ipecacuanha, which may be given combined in a pillular form, in a proportion obvious to every practitioner.— Alkaline remedies are useful in this complaint, as the carbonates of soda and potash, as is also the decoction or extract of taraxacum. The latter requires to be given in the dose of at least half a dram three times a day. In one case, where this remedy was exhibited, the patient received so much relief that he thought himself cured, but the disease subsequently returned. The effect of this remedy was to impart a gentle warmth to the stomach, and to keep the bowels in a regular state, without relaxing them.

Whatever ambiguity may attend the employment of mercury in the early stage of chronic hepatitis, there can be little doubt but that in the advanced stages, when disorganization has actually taken place, it is calculated to do more harm than good, and only accelerates the fatal event. In such cases, and in others where the action of mercury has been found unfavourable, the nitro-muriatic acid bath has been recommended as a substitute, and in such cases its utility stands attested by the most respectable testimonies.

With respect to external remedies, the most efficacious are leeches; at least twenty of those animals should be applied to the side, along the margin of the ribs, and to the scrobiculus cordis, and this process repeated again and again, until the pain and swelling, if such exist, be entirely removed. Cupping glasses also may be applied to the same end to the epigastrium, and all along the margin of the ribs, if the leeches should fail of effect. To those measures blisters may succeed, and will be found extremely useful;—we doubt if the tartar-emetic ointment possess any advantage over cancharides;—in cases of long standing we believe an issue or seton to be a useful remedy; and this measure stands recommended by Dr. Johnson, who states that he found it beneficial in his own person. By means like the above several cases of chronic hepatitis, of the confirmed kind, where disorganization and induration had actually taken place, have been so far palliated as to preserve the patient's life for many years.

RHEUMATISM.

Next in point of frequency to the diseases already described, we may place rheumatism, which, though at all times prevalent among the poor of this city, yet was peculiarly so throughout the whole of the year 1829, which was distinguished by a lower temperature than ordinary: several cases accordingly of acute rheumatism, in its most aggravated form, became the subjects of medical treatment in this hospital. The observations made on the causes of dysentery will at once suggest to the medical reader the explanation of the extraordinary prevalence of rheumatism among the poorer classes in Dublin.

The humidity of our western atmosphere, surcharged with the vapours rolled from the bosom of the Atlantic, our consequent heavy rains, and high winds, our rapid alterations of temperature, added to the ill-clothed, ill-lodged, and too often ill-fed condition of our poor: to the absence, in fine, of every comfort, expose them, in a peculiar manner, to the attacks of this disease, which frequently terminates in rigidity, immobility, and ankylosis of the joints, and deprives the unhappy sufferer of the perfect use of his limbs.

It appears that gout and rheumatism were confounded under the common name of arthritis by the antients, even down to the seventeenth century, at which period Ballonius, a French physician, first proposed the distinction of the two diseases. It was not until the publication of the

three last editions of his works, as we are informed by professor Bischoff, that Boerhave himself made this distinction.

The usual division of rheumatism into acute and chronic, synonymous with febrile and non-febrile rheumatism, admits of a subdivision of each, into the arthritic and muscular rheumatism, according as the joints or the muscles happen to be the seats of the disease. Of each of those species there are, doubtless, several varieties depending on the particular constituent structure, whether of joint or muscle, principally affected ; but we are as yet not possessed of data sufficient to discriminate them. The white fibrous tissues with the synovial membranes and bursæ, which compose the joints, the tendons and aponeurotic coverings of the muscles, together with the nerves themselves of those structures, are the seats of this disease ; but it appears impossible to ascertain, with precision, from the external appearances, or the symptoms, which of those parts forms the principal seat of the disease ; or, whether all are not involved simultaneously. Dr. Scudamore informs us, that the inflammation of the ligaments constitutes the most intense and painful variety, and that of the bursæ the least intense ; but we really cannot see any better foundation than conjecture for this opinion.

Mr. Lawrence is of opinion that the pains so frequently felt running along the muscles, belong to the class of neuralgiæ, and there is a high degree of probability, that this opinion is in many instances correct ; and that those sympathetic pains of the joints and muscles, which accom-

pany fevers and other diseases are of this character; but it appears also pretty certain that the inflammation, or sub-inflammation of the other constituent textures of the muscles may give rise to similar phenomena. The central and tendinous parts of the muscles appear to be the principal seats of rheumatic inflammation:—for, if we insulate a portion of the external fibres of the muscle, and examine it by pressure, we shall seldom find that it is affected with pain, at least, never in the same degree with the central portion.

The etiology of rheumatism is less equivocal than that of any other disease, with which we are acquainted, which is not produced by a specific cause: in almost every case of rheumatism we can trace the disease with tolerable certainty to the application of cold, general or local; or to that of moisture, which, probably operates by producing cold. Damp linen or other clothing, is, perhaps, the most prolific cause of rheumatism, and few there are, we believe, in society, who will not find the confirmation of this proposition in their own experience. The mere change of a single article of dress will sometimes produce rheumatism in persons predisposed. Acute rheumatism is the least fatal of the acute phlegmasiæ; thus, in one hundred and seventy cases of acute rheumatism, treated by Dr. Haygarth, twelve only proved fatal; in seven hundred and fifty-one cases, treated by Sir Gilbert Blane, in St. Thomas's hospital, thirteen proved fatal; and we are informed by Sir J. M'Gregor, that in 68096 cases of acute rheumatism, which occurred in the army, two only were fatal. In the practice of this hospital, out

of a very large number of cases of acute rheumatism, which came under the observation and treatment of the author, he cannot call to his recollection a single instance of fatal termination, until the past year, in which he regrets to state, that one case terminated fatally. The following is a brief outline of this case:—

William Padden, aged 28; labourer; sixth day of illness; admitted September 29, 1829. Labours under the ordinary symptoms of acute rheumatism, attended with high fever; all the large joints of the upper and lower extremities are swelled and painful; pulse is frequent and hard, rather full; tongue is nearly natural in appearance, but is somewhat redder than usual, and is dry in the centre; the skin is soft, and inclined to perspiration; the skin over the affected joints exhibits a pale red blush; there is a tendency to delirium and slumbering; but when roused his intellect is clear, and he answers distinctly; countenance has not the typhoid aspect; urine high coloured and turbid. In the first week after the patient's admission, he was bled three times from the arm to twelve ounces; and treated with the tartar-emetic solution in the usual manner; no material amendment ensued; he was next treated by calomel and Dover's powders, until a very slight affection of the gums was manifest;—no improvement. The sulphat of quinine was then exhibited with as little effect as the other remedies; he finally got the tincture of the soda of colchicum, half a dram twice a day, in a table-spoonful of camphor mixture. This was the only medicine from which he appeared to derive any benefit; the

swellings became less painful, but did not recede; his fever abated, and he became so much better that the usual diet of solid food, consisting of bread and broth, was allowed at his own request; on the following day he was seized with a kind of epileptic fit, which terminated in coma; the paroxysm returned exactly at the same hour on the next day, and proved fatal. He died, October 18, 1829.

This case presents an instance of metastasis to the brain, which we believe to be more common than that to the heart—which latter, however, also occasionally occurs.—The most delicate and difficult point in the treatment of acute rheumatism is, to determine the cases to which general blood-letting is applicable as a remedy, and the extent to which it ought to be carried when adopted. The testimony of practical writers is ambiguous on this subject, as a considerable diversity of opinion prevails among them—but the balance of authority, on the whole, is in favour of this remedy. Although the author has no doubt that general bleeding may prove useful in many cases of this disorder, and accelerate the cure, yet he is of opinion that it does not form an essential part of the treatment. Even where the indications are distinctly marked for its employment, he would recommend that it should never be carried beyond a single moderate bleeding; and, on reflection, it has been a subject of regret to him that it was pushed to the extent noticed above in the case just described, which was the only one of this disease which ever terminated fatally in his practice, and the only one where bloodletting was ever carried to so great an extent. Since

the occurrence of this case, he has omitted general bleeding altogether in the treatment of rheumatism, and has relied solely on the tincture of colchicum, which has proved eminently successful in every instance, without bloodletting.

A strong infusion of the plant millfoil (*achillea millefolium*) having been recommended by the author's friend and colleague, Dr. Stoker, as a powerful diuretic and anti-rheumatic medicine, he thought it his duty to select a very severe case of acute rheumatism, in order to make a comparative trial of this remedy and the colchicum;—the following are the heads of the case submitted to trial on this occasion:—

Thomas Broughan, aged 30; canal boat-man; sixth day of illness; admitted December 30, 1829. Labours under the ordinary symptoms of acute rheumatism, accompanied by fever; large joints of upper and lower extremities swelled and painful; pulse quick and hard; tongue furred and white; sensorium unaffected; urine high coloured and turbid, like porter. *Half pint of the infusion of millfoil, thrice a day, and an ointment made of the plant to be rubbed on the affected joints.*

On the third day after the commencement of the use of this remedy, the febrile symptoms considerably abated; the urine cleared, and became natural in colour; the swellings of the ankles diminished, but those of the wrists remained.

The medicine was continued for three days longer,—in all six days. Swellings of the wrists still remained unabated; one hand he could not move. Swellings of the

ankles diminished, but still incapable of walking, without considerable pain.

The medicine was now discontinued, after having been administered perseveringly for six days; and the patient was directed to take half a dram of tincture of colchicum twice a day, the wrists and ankles being enveloped in combed wool. The medicine produced a profuse general perspiration, and in four days the swellings and pain were entirely removed,—and within six days from the commencement of the colchicum, the patient declared himself perfectly well, and requested to be discharged. He was discharged cured, on 11th January, 1830, having been exactly twelve days under medical treatment.

In several other cases the effects of the colchicum were equally decisive. The author has no doubt, from the testimony of Dr. Stoker, and from what he saw in this case, that the millfoil is possessed of some anti-rheumatic power, but he thinks it far inferior to the colchicum. The diuretic effects of the millfoil were inconsiderable in this particular case, as ascertained by the daily measurement of the urine.

JOHN O'BRIEN.

METEOROLOGICAL TABLE,

[Referred to in p. 258.]

Showing the Medium Heights of the Thermometer and Barometer, and General State of the Weather, for 11 Months of the year 1829.

MONTHS.	THERMOMETER.			BAROMETER.		PREVAILING WINDS.	GENERAL OBSERVATIONS.	
	Highest.	Lowest.	Medium.	Highest.	Lowest.	Medium.		
FEBRUARY .	52	33	42	30.2	29	29.6	N.E. N.W. S.E.	No storms.
MARCH . .	58	33	45	30.2	29	29.6	E. N.E.	Dry generally and fair. 4 wet days. High winds prevalent.
APRIL . . .	56	37	46	29.8	28.6	29.2	W. N.W. N.E.	Harsh winds, with 6 days heavy rain. Majority of days dry and
MAY . . .	67	48	57	30.2	29.3	29.7	W. N.W. S.E.	Dry, with high and harsh winds.
JUNE . . .	68	53	60	30.2	29.4	29.7	W. S.W. N.E.	Mostly dry, with harsh winds.
JULY . . .	70	55	62	29.5	29.1	29.8	W. N.W. S.E.	Heavy rain on 1st, 2d, 3d, 4th, 24th, 29th.
AUGUST . .	70	52	61	30	29.3	29.3	W. S.W. N.E.	Rain on majority of days.
SEPTEMBER .	65	48	56	29.9	28.7	29.6	N.W. S.W.	Rain on twelve days in this month.
OCTOBER . .	60	40	50	30	29.3	29.6	N.W. W. S.W.	Middle of month wet; rest dry.
NOVEMBER .	57	30	43	29.9	29.3	29.6	S.E. N.S.E.	Majority of days wet. Frost in middle of month.
DECEMBER .	57	29	43	30	29.1	29.5	S.E. S. S.W.	Rain in beginning of month. Frost in middle and end.

DESCRIPTION OF A VERY REMARKABLE
MALFORMATION IN A FETUS,

IN WHICH NEARLY ALL THE ABDOMINAL VISCERA AND THE INTESTINAL CANAL WERE
EXTERNAL TO THE BODY,

BY

WM. F. MONTGOMERY, A.M. M.B. M.R.I.A.

PROFESSOR OF MIDWIFERY IN THE KING AND QUEEN'S COLLEGE OF PHYSICIANS IN IRELAND,
AND PHYSICIAN ACCOUCHEUR TO SIR PATRICK DUN'S HOSPITAL.

Read 1st June, 1830.

I am indebted to the kindness of my friend, Dr. Thomas Ferguson, for the opportunity of laying before the Association the following description of a malformation in a foetus, which, although probably not without a parallel, is certainly so unusual and extraordinary, as to render a particular description of it worthy of being recorded.

A very detailed account of a monster having several points of similarity to the one before us, is given by Geoffroy St. Hilaire, in his *Philosophie Anatomique, Monstruosités Humaines*, p. 155, but it also differs so remarkably in other respects, as scarcely to lessen the claim to novelty in the present instance: I shall take occasion,

as I go along, to refer to the points of resemblance or dissimilarity between the two.

A lady in the seventh month of pregnancy was taken in labour, and without the occurrence, so far as I can learn, of any thing unusual, was delivered of a child and some accompanying substance, the appearance of which altogether was such, as to create great surprise in the attendants: Dr. Ferguson who was then called in, with some difficulty succeeded in securing it for further examination, and subsequently conferred on me the favour of presenting it to me for dissection and preservation in my museum.

The size of the fœtus is what might be expected in the seventh month, its length being fourteen inches: the upper part of the thorax, with the arms and hands, are well formed and justly proportioned, as are also the head and face, the features of which are even more than usually handsome and expressive; a rare circumstance in cases of monstrosity of this particular description; see plate 3. The lower part of the thorax is compressed, both from the sides, and backwards towards the spine, and this compression backwards is still more remarkable in the integuments of the abdomen, outside of which lies the whole of the alimentary canal (except the œsophagus,) together with the liver, pancreas and spleen. Viewed anteriorly, the liver is the object which most prominently arrests the eye, and below it the convolutions of the intestines; if the liver be raised or turned aside, the stomach, pancreas, and spleen present themselves immediately behind it.

The placenta remains attached by its funis, which is very short, not more than four and a half inches long, and

having its vessels running parallel, instead of being twisted round each other, as they should be; attached to the circumference of the placenta are the natural membranes, and an additional membranous pouch is firmly attached to one part of its anterior surface, which will require a more particular description.

There are neither genital organs, nor anus, in the usual situation of these parts. In the monster described by St. Hilaire, these parts were in their natural situation, which was also the case with those described by Rudolphi: see pp. 188 and 199.

The left thigh and leg are well formed and naturally placed, but the right limb is distorted, and from its connexion with the pelvis, returns at an acute angle with the body, so that the foot lies when undisturbed, towards the right ear.

Viewed posteriorly, the lobulated external surface of the placenta, one lobe of the liver, the stomach with its great arch directed *upwards*, the spleen, and a tumour about as large as a goose-egg, springing from the lower half of the spinal column, are the objects which appear necessary to notice, in order to complete this general description of the external appearances.

DISSECTION.—The contents of the thorax did not differ in any respect that I could observe from the ordinary condition of the viscera contained in that cavity.

The abdomen, of course, presented several peculiarities. In the first place, the anterior integuments lay in contact with the spine almost throughout, so that in fact there was but little cavity, except in one situation, which was

immediately behind the umbilicus, and there collected into one spot, lay the only abdominal viscera which were internal.

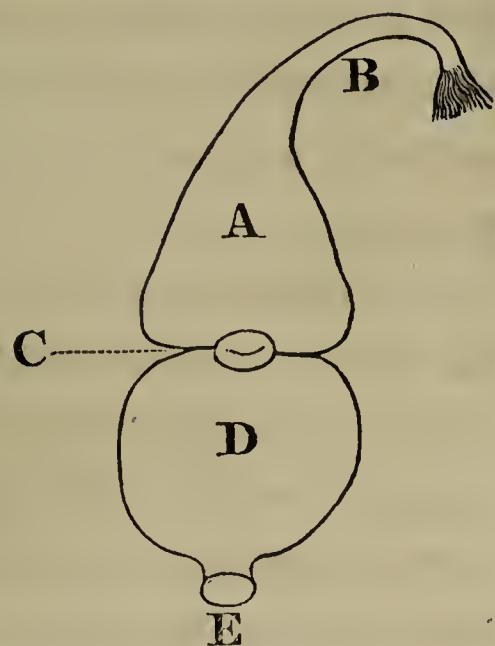
They lay in a sort of sac of about an inch and half diameter, and consisted of one kidney, with its renal capsule and ureter, the uterus and vagina. "Il n 'etait resté, dans la cavité abdominale chez notre monstre, d'autres viscères, que ceux des systèmes urinaire et sexuel," St. Hilaire, p. 191.

The kidney lay towards the left side of the sac, with its renal capsule in its proper situation, the ureter was about two inches and a half long, somewhat convoluted, and alternately distended and contracted throughout its length; I could not, after the most careful examination, ascertain where it terminated; air blown into its renal extremity first distended its cavity forcibly, and then gradually escaped from the remote end; but where, I could not discover by dissection. I traced it to the surface of the uterus, where its tube was so diminished as to be incapable of transmitting a bristle: it passed through the peritoneal covering of that organ, and was insensibly lost; neither could I discover any organ or cavity like the bladder, nor could I, as I have just said, trace the single ureter to any external opening by which fluid might escape, had it been secreted by the kidney.

In St. Hilaire's monster there were two kidneys, with ureters following the usual course, and terminating in the bladder, p. 190.

A little to the right side of the entrance of the cord into the abdomen, is a small regularly formed circular

aperture, with prominent edges ; marked G. in plate 3 ; this is the external orifice of, or entrance into the vagina, which lies immediately behind the integuments, and is in form of a circular pouch of about half an inch, or a little more in diameter ; into the remote end projects the os uteri of a natural form and appearance, but the uterus itself is malformed, being of this shape, and having only one fallopian tube running off from its apex, as if it were a continuation of the part, and having a continuous cavity as in the bicorned uterus of a quadruped. I could not discover any ovary at either side of the uterus.



Immediately over and at each side of the small external aperture of the vagina, are two corrugated and prominent bodies of a spongy texture, and about as large as peas : from their situation and structure, I presume they are imperfectly and malformed labia. Between these bodies and a little to the right of the orifice of the vagina, is a very small circular aperture, marked H. in plate 3, which, from its situation, I concluded was the orifice of the

EXPLANATION OF THE SKETCH.

- A. The uterus of the natural size.
- B. The single fallopian tube.
- C. The os uteri.
- D. The vagina in form of a circular pouch.
- E. The orifice of the vagina, opening externally at G, as represented in plate 3.

urethra; but no such duct exists, and this small aperture is impervious, and merely a very short cul de sac.

St. Hilaire's monster was a male, and the genitals presented but little irregularity, see p. 199.

The anterior integuments of the thorax and abdomen were quite closed both above and below the umbilicus, nor was there any deficiency of integument in that part; a circumstance in which this specimen differs from the examples of external viscera, which I have been able to find recorded.

In that described by St. Hilaire, the trunk was open anteriorly, “superieurement jusqu' a la naissance des clavicules, et inferieurement jusqu'a la symphyse des os anterieurs du bassin.”—Philosophie Anatomique, p. 184.

The œsophagus occupied its natural situation from the fauces to near the cardiac orifice of the stomach, where it issued from the abdominal cavity to join the stomach which lay outside; its passage through the integuments being protected by a close union with the parts through which it passed: the stomach, spleen, pancreas and liver, were placed as nearly as possible in their natural relations with regard to each other, and were perfectly well formed, as was also the intestinal canal which consisted almost exclusively of small intestines only; by tracing it from the stomach downwards, I found that its termination was at the opening of the ileum into the cœcum, and forms the ileo-cœcal valve, which however, in this instance, opened externally, and the contents of the intestines passed out freely when pressed through the valvular orifice at M. the appendix vermiciformis is attached to this opening, but

there is no further portion of the cœcum, colon, or rectum to be found: in fact the whole of the large intestine is deficient.

These abdominal viscera were evidently, during the uterine existence of the child, contained in the pouch of membrane already mentioned as adhering at one of its extremities to the serous surface of the placenta: and at the other end attached all round the umbilicus to the edges of the circular space, within which are the orifices of the vagina and intestine, labia, &c. and then, enlarging, it formed a flask-shaped bag or sac, within which lay the external viscera, to which it had in this way the relation of the abdominal peritoneum, and for which, indeed, we may look upon it as having been a sort of substitute.

On more minute examination of the relations of this membranous pouch, I find that it is formed by the amnion disposed in a curious way: the pouch lies between the cavity of the amnion and the investing chorion, but yet having amnion both inside and outside of it; it seems that while the child lay as usual in the general cavity of the amnion, the abdominal or umbilical region *remained* in contact with the amnion, as it always is in the first period of foetal life, and then the external viscera, as they grew, pushing forward, carried before them the amnion with which they were in contact, and reflected it upon itself, forming a pouch, just as the abdominal peritoneum is related to the liver or stomach.

I find this arrangement corresponds remarkably with the account given by St. Hilaire of the disposition of the membranous septa observed in his case, which he describes

as “disposés pour la plupart comme les lâmes du peritone, ils étaient une continuation des membranes de l’ amnios,” see p. 210.

This preternatural union between the fœtus and its placenta is made by St. Hilaire, the essential character and cause of a class of monsters in which the brain is partially outside the cranium, and enveloped in the attached membranes: to this class he has given the name of *hyperencephali*.

Very lately also a book has been published by Rudolphi on this subject, entitled “Monstrorum trium, præter naturam cum secundinis coalitorum, disquisitio.” These were all hyperencephali, and except in the formation of the head, exhibited nothing remarkable: the work contains nothing to illustrate the specimen I am describing.

The umbilical cord ran along the reflected portion of the amnion of nearly five inches in length, and instead of being free as usual, with the membranes surrounding it, it was bound down by the amnion, and lay quite flat on the surface of the placenta, and along the duplicature of the amnion; it contains only one vein and one artery; the exact origin or course of the single artery I regret I am unable to describe; the parts having been so dissected before I discovered the peculiarity, that I could not trace the artery to its source.

The tumour on the back is a *spina bifida*, arising from the lumbar vertebræ, and presenting nothing but the ordinary construction of such tumours; its size was (before opening it) such as to contain about six ounces of fluid, and having cut out the back of the vertebral column all

along from the connexion with the skull, the dura mater is displayed from its exit from the cavity of the cranium along the spinal canal, from which it issues where the lumbar spinous processes are deficient, and dilating, forms the lining membrane of the tumour.

The bones of the pelvis, posteriorly, are very loosely connected to the sacrum, and anteriorly have no connexion at the symphysis, the bones of the pubis being separated from each other to a distance of nearly three quarters of an inch, so that in fact there is no pelvic cavity.

The spine is very much distorted, having both an anterior, and lateral curvatures.

A very accurate cast of this monster was taken before the parts were disturbed, and is preserved, together with the body of the monster, in my museum; for a correct representation of the general appearance and form, see plate 3.

W. F. MONTGOMERY.

END OF PART I.

REFERENCES TO THE PLATES.

PLATE I.

Represents the appearance of the tumour as it was seen on opening
the body see, p. 138.

- A . . . The upper part of the ovary.
- B B B B . The morbid growth springing from the inside of the ovary, and turning over its sides.
- C C . . The deep cleft or fissure in the ovary as described at p. 138.

PLATE II.

A posterior view of the parts after their removal from the pelvis.

- A . . . The uterus enlarged to twice its ordinary size.
- B . . . The left ovary tuberculated on its surface.
- C . . . The right fallopian tube attached to the diseased ovary.
- D . . . The right ovary, which was the seat of the disease.
- E E E . . The diseased structure which having turned over the sides of the ovary, is visible from behind.
- F . . . A small hydatid tumour attached to the left fallopian tube.
- G . . . Parts of the coat of the ovary so transparent that the diseased structure could be seen through it. .

REFERENCES TO THE PLATES.

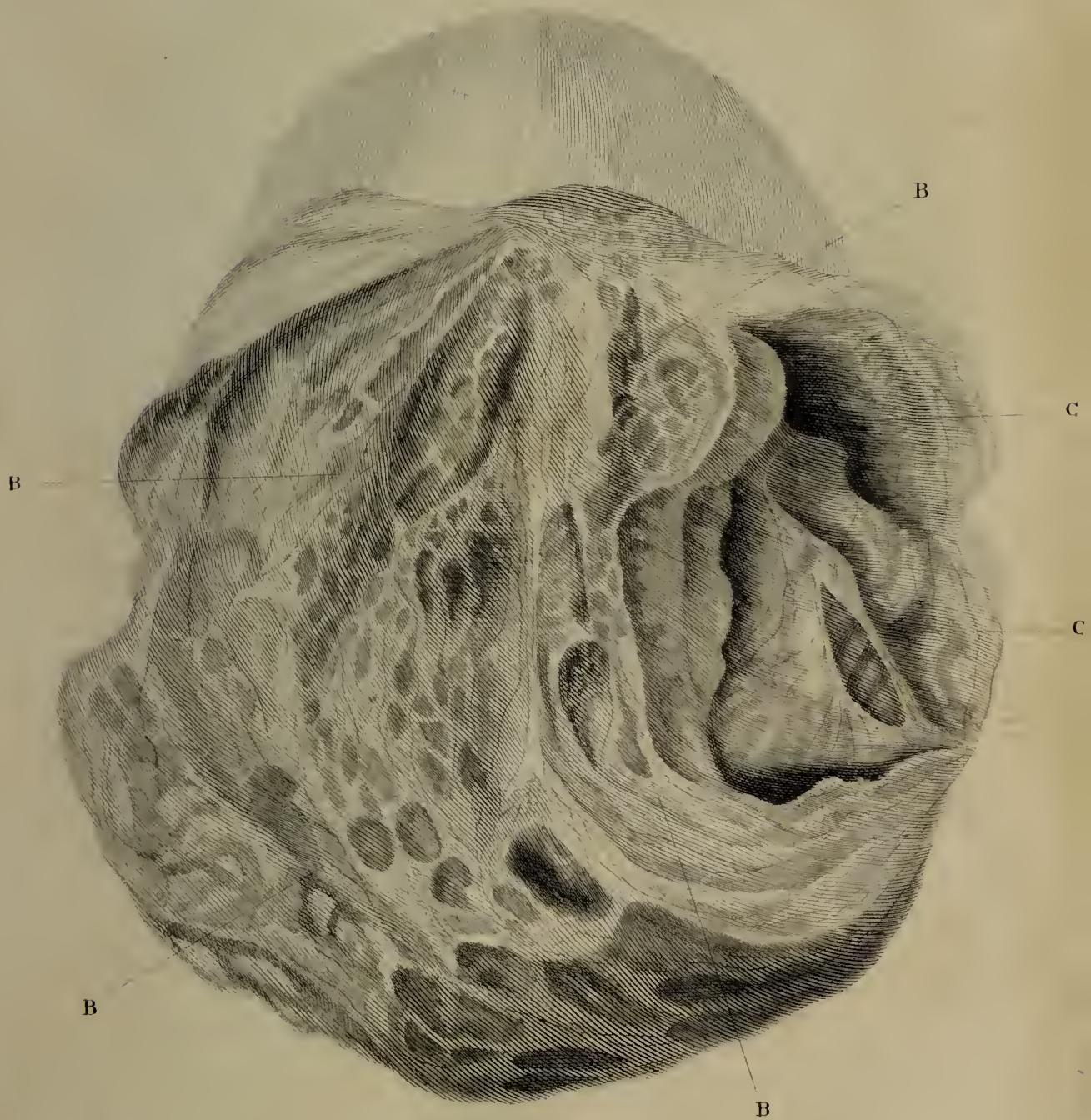
PLATE III.

Exhibits the general figure and appearance of the monster, with its placenta, &c. as at birth.

- A . . . The fœtus, the countenance more than usually expressive.
- B . . . The situation of the additional membranous pouch as described at pp. 380--1.
- D . . . The placenta with its membranes.
- E . . . The liver.
- F . . . The intestines.
- G . . . The external opening of the vagina.
- H . . . The small aperture in the situation of the meatus urinarius, see p. 379.
- I . . . The corrugated spongy bodies, resembling labia.
- K . . . The right thigh turning upwards at an acute angle with the body.
- L . . . The spina bifida tumour.
- M . . . The valvular orifice of the intestine.
- N . . . Some torn remains of the additional membranous pouch which was attached all round this space.

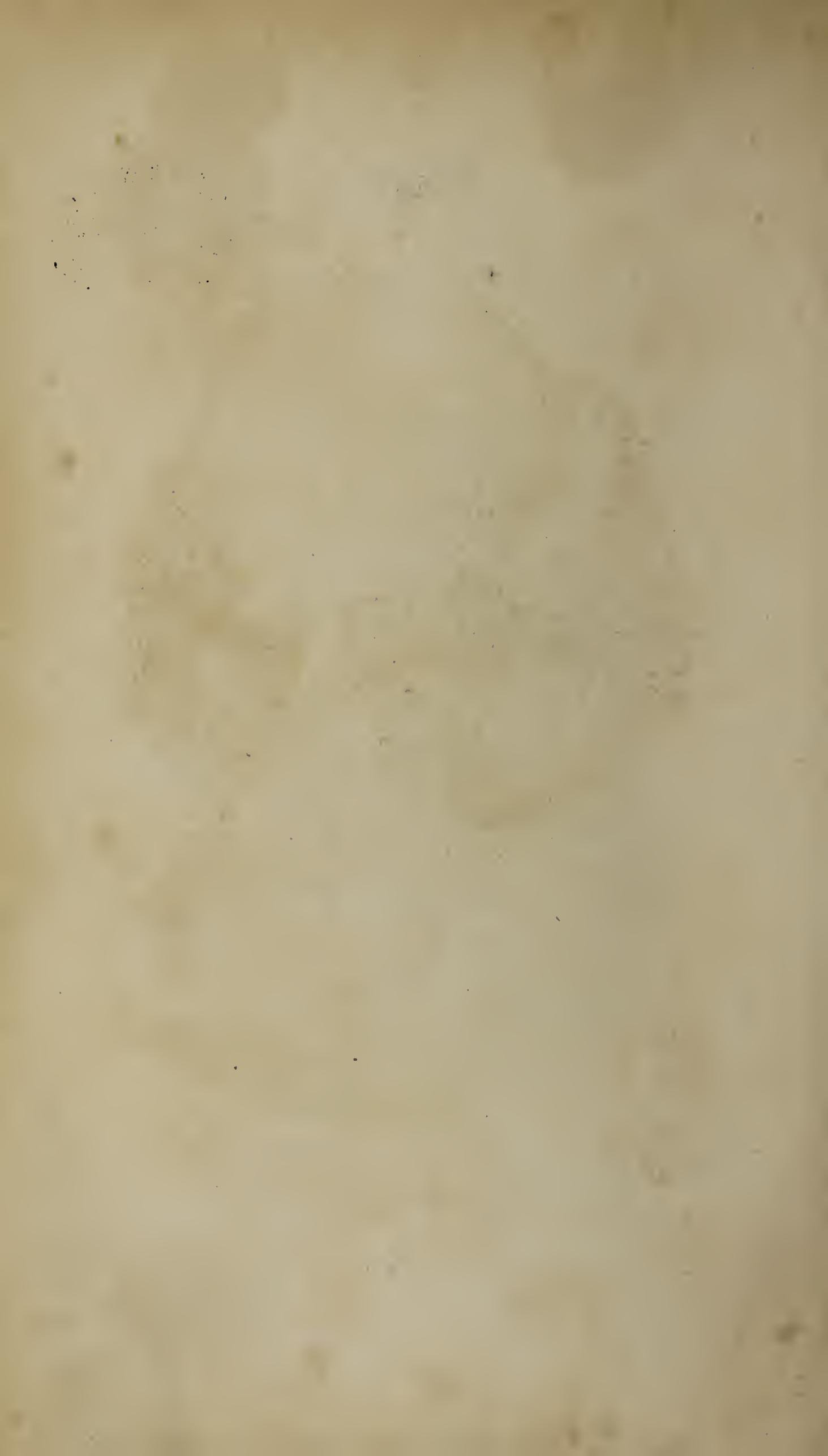


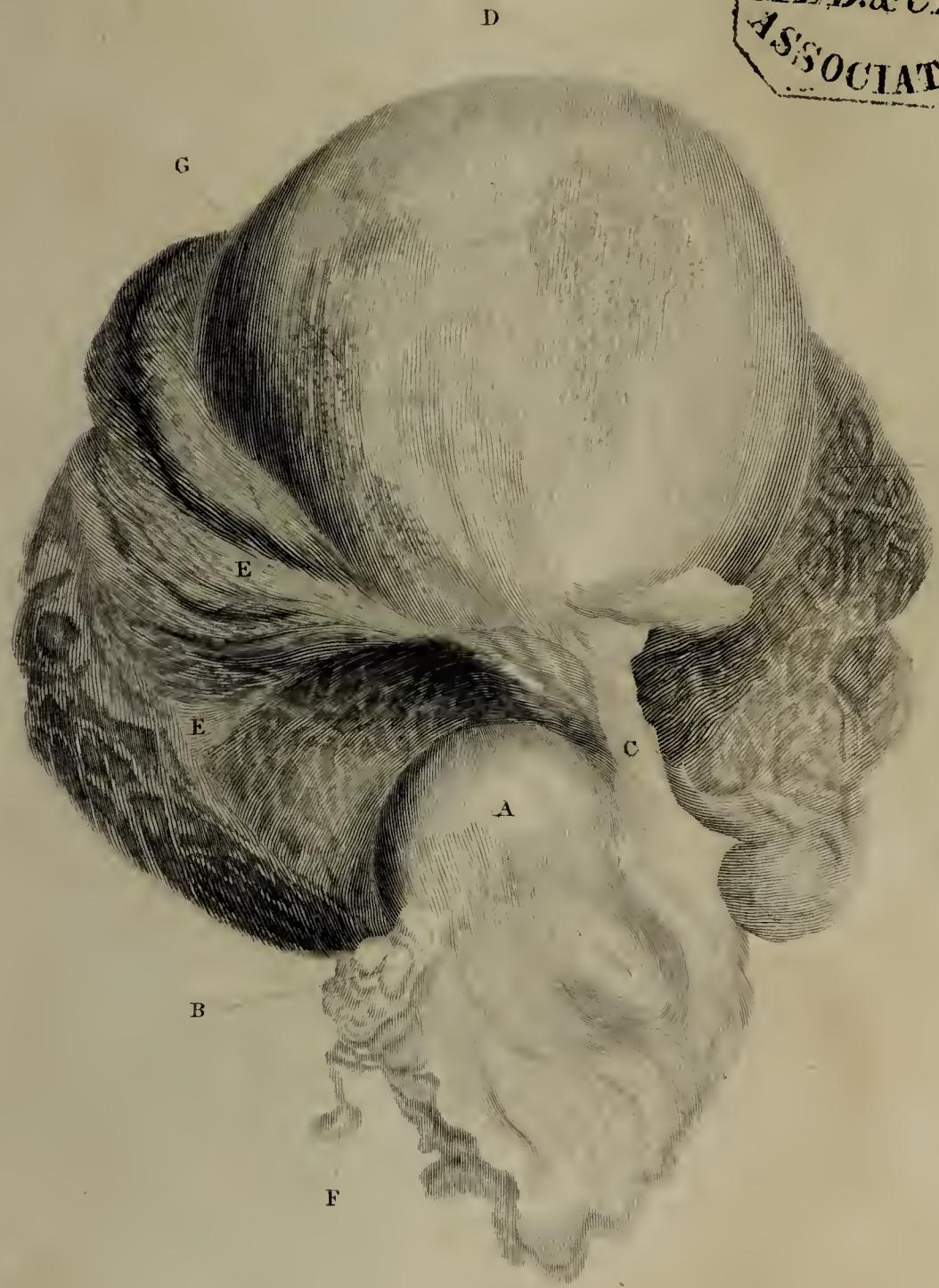
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